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## SEQUENCE LISTING

<110> Probst, Peter  
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Maisonnette, Jeff

<120> COMPOSITIONS AND METHODS FOR TREATMENT AND  
DIAGNOSIS OF CHLAMYDIAL INFECTION

<130> 210121.469C4

<140> US/09/454,684

<141> 1999-12-03

<160> 310

<170> FastSEQ for Windows Version 3.0/4.0

<210> 1

<211> 481

<212> DNA

<213> Chlamydia trachomatis

<400> 1

|            |            |            |            |            |             |     |
|------------|------------|------------|------------|------------|-------------|-----|
| ctgaagactt | ggctatgttt | tttattttga | cgataaacct | agttaaggca | taaaagagtt  | 60  |
| gcgaaggaag | agccctcaac | ttttcttata | accttcttta | actaggagtc | atccatgagt  | 120 |
| caaaataaga | actctgcttt | catgcagcct | gtgaacgtat | ccgctgattt | agctgccatc  | 180 |
| gttggtgcag | gacctatgcc | tcgcacagag | atcattaaga | aaatgtggga | ttacattaag  | 240 |
| gagaatagtc | ttcaagatcc | tacaaacaaa | cgtaatatca | atcccgatga | taaattggct  | 300 |
| aaagtttttg | gaactgaaaa | acctatcgat | atgttccaaa | tgacaaaaat | ggttttctcaa | 360 |
| cacatcatta | aataaaatag | aaattgactc | acgtgttcct | cgtctttaag | atgagggaact | 420 |
| agttcattct | ttttgttcgt | ttttgtgggt | attactgtat | ctttaacaac | tatcttagca  | 480 |
| g          |            |            |            |            |             | 481 |

<210> 2

<211> 183

<212> DNA

<213> Chlamydia trachomatis

<400> 2

|             |            |            |            |            |            |     |
|-------------|------------|------------|------------|------------|------------|-----|
| atcggttggtg | caggacctat | gcctcgcaca | gagatcatta | agaaaatgtg | ggattacatt | 60  |
| aaggagaata  | gtcttcaaga | tcctacaaac | aaacgtaata | tcaatcccga | tgataaattg | 120 |
| gctaaagttt  | ttggaactga | aaaacctatc | gatatgttcc | aatgacaaa  | aatggtttct | 180 |
| caa         |            |            |            |            |            | 183 |

<210> 3

<211> 110

<212> DNA

<213> Chlamydia trachomatis

<400> 3  
 gctgcgacat catgcgagct tgcaaacc aa catggacatc tccaatttcc ctttctaact 60  
 cgctcttttg aactaatgct gctaccgagt caatcacaaat cacatcgacc 110

<210> 4  
 <211> 555  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 4  
 cggcaccgagc ctaagatgct tatactactt taagggaggc ccttcgtatg ccgcgcacatca 60  
 ttggaataga tattcctgcg aaaaagaaat taaaaataag tcttacatat atttatggaa 120  
 tagggccagc tctttctaaa gagattattg ctagattgca gttgaatccc gaagctagag 180  
 ctgcagagtt gactgaggaa gaggttggtc gactaaacgc tcttttacag tcggattacg 240  
 ttgttgaagg ggatttgcg cgtcgtgtgc aatctgatat caaacgtctg attactatcc 300  
 atgcttatcg tggacaaaga catagacttt ctttgccctgt tcgtgggtcag agaacaaaaa 360  
 caaattctcg cacgcgtaag ggtaaacgta aaactattgc aggtagaag aaataataat 420  
 ttttaggaga gagtgttttg gttaaaaatc aagcgcaaaa aagaggcgta aaaagaaaac 480  
 aagtaaaaaa cattccttcg ggcgttggtc atgttaaggc tacttttaaat aatacaattg 540  
 taaccataac agacc 555

<210> 5  
 <211> 86  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 5  
 Met Ser Gln Asn Lys Asn Ser Ala Phe Met Gln Pro Val Asn Val Ser  
 1 5 10 15  
 Ala Asp Leu Ala Ala Ile Val Gly Ala Gly Pro Met Pro Arg Thr Glu  
 20 25 30  
 Ile Ile Lys Lys Met Trp Asp Tyr Ile Lys Glu Asn Ser Leu Gln Asp  
 35 40 45  
 Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val  
 50 55 60  
 Phe Gly Thr Glu Lys Pro Ile Asp Met Phe Gln Met Thr Lys Met Val  
 65 70 75 80  
 Ser Gln His Ile Ile Lys  
 85

<210> 6  
 <211> 61  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 6  
 Ile Val Gly Ala Gly Pro Met Pro Arg Thr Glu Ile Ile Lys Lys Met  
 1 5 10 15  
 Trp Asp Tyr Ile Lys Glu Asn Ser Leu Gln Asp Pro Thr Asn Lys Arg  
 20 25 30  
 Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val Phe Gly Thr Glu Lys  
 35 40 45  
 Pro Ile Asp Met Phe Gln Met Thr Lys Met Val Ser Gln  
 50 55 60

<210> 7  
 <211> 36

<212> PRT

<213> Chlamydia trachomatis

<400> 7

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Thr | Ser | Cys | Glu | Leu | Ala | Asn | Gln | His | Gly | His | Leu | Gln | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Pro | Leu | Leu | Thr | Arg | Ser | Leu | Glu | Leu | Met | Leu | Leu | Pro | Ser | Gln | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Gln | Ser | His | Arg |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     | 35  |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 8

<211> 18

<212> PRT

<213> Chlamydia trachomatis

<400> 8

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | His | His | Ala | Ser | Leu | Gln | Thr | Asn | Met | Asp | Ile | Ser | Asn | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Pro | Phe |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 9

<211> 5

<212> PRT

<213> Chlamydia trachomatis

<400> 9

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| Leu | Ala | Leu | Trp | Asn |
| 1   |     |     |     | 5   |

<210> 10

<211> 11

<212> PRT

<213> Chlamydia trachomatis

<400> 10

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Cys | Tyr | Arg | Val | Asn | His | Asn | His | Ile | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

<210> 11

<211> 36

<212> PRT

<213> Chlamydia trachomatis

<400> 11

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Val | Ile | Val | Ile | Asp | Ser | Val | Ala | Ala | Leu | Val | Pro | Lys | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Glu | Leu | Glu | Gly | Glu | Ile | Gly | Asp | Val | His | Val | Gly | Leu | Gln | Ala | Arg |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Met | Met | Ser | Gln |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 35  |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 12

<211> 122

<212> PRT

<213> Chlamydia trachomatis

<400> 12  
 Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys  
 1 5 10 15  
 Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Pro Ala Leu Ser Lys Glu  
 20 25 30  
 Ile Ile Ala Arg Leu Gln Leu Asn Pro Glu Ala Arg Ala Ala Glu Leu  
 35 40 45  
 Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln Ser Asp Tyr  
 50 55 60  
 Val Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg  
 65 70 75 80  
 Leu Ile Thr Ile His Ala Tyr Arg Gly Gln Arg His Arg Leu Ser Leu  
 85 90 95  
 Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly  
 100 105 110  
 Lys Arg Lys Thr Ile Ala Gly Lys Lys Lys  
 115 120

<210> 13  
 <211> 20  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 13  
 Asp Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys  
 1 5 10 15  
 Val Phe Gly Thr  
 20

<210> 14  
 <211> 20  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 14  
 Asp Asp Lys Leu Ala Lys Val Phe Gly Thr Glu Lys Pro Ile Asp Met  
 1 5 10 15  
 Phe Gln Met Thr  
 20

<210> 15  
 <211> 161  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 15  
 atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcttc atcggaggaa 60  
 ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac aaaatgctgg 120  
 cgcaaccgtt tctttcttcc caaactaaag caaatatggg a 161

<210> 16  
 <211> 897  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 16

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atggcttcta tatgcgagcg tttaggggtct ggtacagggga atgctctaaa agcttttttt 60
acacagccca acaataaaat ggcaagggtta gtaaataaga cgaagggaat ggataagact 120
attaaggttg ccaagtctgc tgccgaattg accgcaaata ttttggaca agctggaggc 180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
actgttgctg ctttagggaa tgcctttaac ggagcggtgc caggaacagt tcaaagtgcg 300
caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggtgt ctgtagcatc 420
atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
aaaatgctgg caaaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
agctatatta tggcgggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
gcggaaagag cagattgcga agcccgctgc gctcgtattg cgagagaaga gtcgttactc 660
gaagtgccgg gagaggaaaa tgcttgcgag aagaaagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780
gacgttttca aattgggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

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<210> 17

<211> 298

<212> PRT

<213> Chlamydia trachomatis

<400> 17

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Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1           5           10           15
Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
 20           25           30
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
 35           40           45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50           55           60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
 65           70           75           80
Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85           90           95
Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
100           105           110
Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
115           120           125
His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
130           135           140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
145           150           155           160
Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
165           170           175
Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
180           185           190
Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
195           200           205
Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly
210           215           220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
225           230           235           240
Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
245           250           255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
260           265           270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile

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275 280 285  
 Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala  
 290 295

<210> 18  
 <211> 18  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 18  
 Arg Ala Ala Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile Thr  
 1 5 10 15  
 Tyr Leu

<210> 19  
 <211> 18  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 19  
 Cys Ser Phe Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile  
 1 5 10 15  
 Arg Pro

<210> 20  
 <211> 216  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 20  
 Met Arg Gly Ser Gln Gln Ile Phe Val Cys Leu Ile Ser Ala Glu Arg  
 1 5 10 15  
 Leu Arg Leu Ser Val Ala Ser Ser Glu Glu Leu Pro Thr Ser Arg His  
 20 25 30  
 Ser Glu Leu Ser Val Arg Phe Cys Leu Ser Thr Lys Cys Trp Gln Asn  
 35 40 45  
 Arg Phe Phe Leu Pro Lys Leu Lys Gln Ile Trp Asp Leu Leu Leu Ala  
 50 55 60  
 Ile Leu Trp Arg Leu Thr Met Gln Arg Leu Trp Trp Val Leu Asp Ser  
 65 70 75 80  
 Leu Ser Val Arg Lys Glu Gln Ile Ala Lys Pro Ala Ala Leu Val Leu  
 85 90 95  
 Arg Glu Lys Ser Arg Tyr Ser Lys Cys Arg Glu Arg Lys Met Leu Ala  
 100 105 110  
 Arg Arg Lys Ser Leu Glu Arg Lys Pro Arg Arg Ser Arg Ala Ser Ser  
 115 120 125  
 Met His Ser Ser Leu Cys Ser Arg Ser Phe Trp Asn Ala Leu Pro Thr  
 130 135 140  
 Phe Ser Asn Trp Cys Arg Cys Leu Leu Gln Trp Val Phe Val Arg Leu  
 145 150 155 160  
 Trp Leu Leu Asp Val Arg Ser Leu Leu Gln Leu Leu Asp Cys Ala Leu  
 165 170 175  
 Ser Ala Pro Glu His Lys Gly Phe Phe Lys Phe Leu Lys Lys Lys Ala  
 180 185 190  
 Val Ser Lys Lys Lys Gln Pro Phe Leu Ser Thr Lys Cys Leu Ala Phe

195 200  
Leu Ile Val Lys Ile Val Phe Leu  
210 215

205

<210> 21  
<211> 1256  
<212> DNA  
<213> Chlamydia trachomatis

&lt;400&gt; 21

|            |            |            |             |             |            |      |
|------------|------------|------------|-------------|-------------|------------|------|
| ctcgtgccgg | cacgagcaaa | gaaatccctc | aaaaaatggc  | cattattggc  | ggtggtgtga | 60   |
| tcggttgcca | attcgcttcc | ttattccata | cgtaggctc   | cgaagtttct  | gtgatcgaag | 120  |
| caagctctca | aatccttgct | ttgaataatc | cagatatttc  | aaaaaccatg  | ttcgataaat | 180  |
| tcacccgaca | aggactccgt | ttcgtactag | aagcctctgt  | atcaaattatt | gaggatatag | 240  |
| gagatcgcg  | tcggttaact | atcaatggga | atgtcgaaga  | atacgattac  | gttctcgat  | 300  |
| ctataggacg | ccgtttgaat | acagaaaata | ttggcttgga  | taaagctggg  | gttatttgtg | 360  |
| atgaacgcgg | agtcacccct | accgatgcc  | caatgcgcac  | aaacgtacct  | aacatttatg | 420  |
| ctattggaga | tatcacagga | aaatggcaac | ttgccatgt   | agcttctcat  | caaggaatca | 480  |
| ttgcagcacg | gaatataggt | ggccataaag | aggaaatcga  | ttactctgct  | gtcccttctg | 540  |
| tgatctttac | cttccctgaa | gtcgcttcag | taggcctctc  | cccaacagca  | gctcaacaac | 600  |
| atctccttct | tcgcttactt | tttctgaaaa | atttgatata  | gaagaagaat  | tcctcgca   | 660  |
| cttgcgagga | ggagggcgtc | tggaagacca | gttgaaatga  | gctaagtttt  | ctgagcggtt | 720  |
| tgattctttg | cgagaattat | ccgctaagct | tggttacgat  | agcgatggag  | agactgggga | 780  |
| tttcttcaac | gaggagtacg | acgacgaaga | agaggaaatc  | aaaccgaaga  | aaactacgaa | 840  |
| acgtggacgt | aagaagagcc | gttcataagc | cttgctttta  | aggtttggtg  | gttttacttc | 900  |
| tctaaaatcc | aaatggttgc | tgtgccaaaa | agtagtttgc  | gtttccggat  | agggcgtaaa | 960  |
| tgcgctgcat | gaaagattgc | ttcgagagcg | gcacgcgctg  | ggagatccc   | gatactttct | 1020 |
| ttcagatacg | aataagcata | gctgttccca | gaataaaaaac | ggccgacgct  | aggaacaaca | 1080 |
| agatttagat | agagcttggt | tagcaggtaa | actgggttat  | atgttgctgg  | gcgtgttagt | 1140 |
| tctagaatac | ccaagtgtcc | tccaggttgt | aatactcgat  | acacttccct  | aagagcctct | 1200 |
| aatggatagg | ataagttccg | taatccatag | gccatagaag  | ctaaacgaaa  | cgtatt     | 1256 |

<210> 22  
<211> 601  
<212> DNA  
<213> Chlamydia trachomatis

&lt;400&gt; 22

|            |            |            |            |             |            |     |
|------------|------------|------------|------------|-------------|------------|-----|
| ctcgtgccgg | cacgagcaaa | gaaatccctc | aaaaaatggc | cattattggc  | ggtggtgtga | 60  |
| tcggttgcca | attcgcttcc | ttattccata | cgtaggctc  | cgaagtttct  | gtgatcgaag | 120 |
| caagctctca | aatccttgct | ttgaataatc | cagatatttc | aaaaaccatg  | ttcgataaat | 180 |
| tcacccgaca | aggactccgt | ttcgtactag | aagcctctgt | atcaaattatt | gaggatatag | 240 |
| gagatcgcg  | tcggttaact | atcaatggga | atgtcgaaga | atacgattac  | gttctcgat  | 300 |
| ctataggacg | ccgtttgaat | acagaaaata | ttggcttgga | taaagctggg  | gttatttgtg | 360 |
| atgaacgcgg | agtcacccct | accgatgcc  | caatgcgcac | aaacgtacct  | aacatttatg | 420 |
| ctattggaga | tatcacagga | aaatggcaac | ttgccatgt  | agcttctcat  | caaggaatca | 480 |
| ttgcagcacg | gaatataggt | ggccataaag | aggaaatcga | ttactctgct  | gtcccttctg | 540 |
| tgatctttac | cttccctgaa | gtcgcttcag | taggcctctc | cccaacagca  | gctcaacaac | 600 |
| a          |            |            |            |             |            | 601 |

<210> 23  
<211> 270  
<212> DNA  
<213> Chlamydia trachomatis

&lt;400&gt; 23

|            |            |            |            |            |            |    |
|------------|------------|------------|------------|------------|------------|----|
| acatctcctt | cttcgcttac | tttttctgaa | aaatttgata | cagaagaaga | attcctcgca | 60 |
|------------|------------|------------|------------|------------|------------|----|

```

cacttgcgag gaggagggcg tctggaagac cagttgaatt tagctaagtt ttctgagcgt 120
tttgattctt tgcgagaatt atccgctaag cttgggttacg atagcgatgg agagactggg 180
gatttcttca acgaggagta cgacgacgaa gaagaggaaa tcaaaccgaa gaaaactacg 240
aaacgtggac gtaagaagag ccgttcataa 270

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<210> 24  
 <211> 363  
 <212> DNA  
 <213> Chlamydia trachomatis

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<400> 24
ttacttctct aaaatccaaa tggttgctgt gccaaaaagt agtttgcggt tccggatagg 60
gcgtaaattgc gctgcatgaa agattgcttc gagagcggca tcgcgtggga gatcccgat 120
actttctttc agatacgaat aagcatagct gttcccagaa taaaaacggc cgacgctagg 180
aacaacaaga tttagataga gcttggttag caggtaaact gggttatatg ttgctgggcg 240
tgttagtctt agaataccca agtgtcctcc aggttgtaat actcgataca cttccctaag 300
agcctctaatt ggataggata agttccgtaa tccataggcc atagaagcta aacgaaacgt 360
att 363

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<210> 25  
 <211> 696  
 <212> DNA  
 <213> Chlamydia trachomatis

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<400> 25
gctcgtgccg gcacgagcaa agaaatccct caaaaaatgg ccattattgg cgggtggtgtg 60
atcgggttgcg aattcgcttc cttattccat acggttaggct ccgaagtttc tgtgatcgaa 120
gcaagctctc aaatccttgc tttgaataat ccagatattt caaaaaccat gttcgataaa 180
ttcacccgac aaggactccg tttcgtaact gaagcctctg tatcaaatat tgaggatata 240
ggagatcgcg ttcggttaac tatcaatggg aatgtcgaag aatacgatta cgttctcgt 300
tctataggac gccgtttgaa tacagaaaat attggcttgg ataaagctgg tgttatttgt 360
gatgaacgcg gacgcatccc taccgatgcc acaatgcgca caaacgtacc taacatttat 420
gctattggag atatcacagg aaaatggcaa cttgcccatg tagcttctca tcaaggaatc 480
attgcagcac ggaatatagg tggccataaa gaggaaatcg attactctgc tgtcccttct 540
gtgatcttta ccttccctga agtcgcttca gtaggcctct ccccaacagc agctcaacaa 600
catctccttc ttcgcttact ttttctgaaa aatttgatac agaagaagaa ttcctcgcac 660
acttgcgagg aggagggcgt ctggaagacc agttga 696

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<210> 26  
 <211> 231  
 <212> PRT  
 <213> Chlamydia trachomatis

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<400> 26
Ala Arg Ala Gly Thr Ser Lys Glu Ile Pro Gln Lys Met Ala Ile Ile
1      5      10      15
Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe His Thr Leu
20     25     30
Gly Ser Glu Val Ser Val Ile Glu Ala Ser Ser Gln Ile Leu Ala Leu
35     40     45
Asn Asn Pro Asp Ile Ser Lys Thr Met Phe Asp Lys Phe Thr Arg Gln
50     55     60
Gly Leu Arg Phe Val Leu Glu Ala Ser Val Ser Asn Ile Glu Asp Ile
65     70     75     80
Gly Asp Arg Val Arg Leu Thr Ile Asn Gly Asn Val Glu Glu Tyr Asp
85     90     95
Tyr Val Leu Val Ser Ile Gly Arg Arg Leu Asn Thr Glu Asn Ile Gly

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          100          105          110
Leu Asp Lys Ala Gly Val Ile Cys Asp Glu Arg Gly Val Ile Pro Thr
      115          120          125
Asp Ala Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala Ile Gly Asp
      130          135          140
Ile Thr Gly Lys Trp Gln Leu Ala His Val Ala Ser His Gln Gly Ile
      145          150          155          160
Ile Ala Ala Arg Asn Ile Gly Gly His Lys Glu Glu Ile Asp Tyr Ser
      165          170          175
Ala Val Pro Ser Val Ile Phe Thr Phe Pro Glu Val Ala Ser Val Gly
      180          185          190
Leu Ser Pro Thr Ala Ala Gln Gln His Leu Leu Leu Arg Leu Leu Phe
      195          200          205
Leu Lys Asn Leu Ile Gln Lys Lys Asn Ser Ser His Thr Cys Glu Glu
      210          215          220
Glu Gly Val Trp Lys Thr Ser
      225          230

```

<210> 27  
 <211> 264  
 <212> DNA  
 <213> Chlamydia pneumoniae

```

<400> 27
atgagtcaaaa aaaataaaaa ctctgctttt atgcatcccg tgaatatttc cacagattta      60
gcagttatag ttggcaaggg acctatgccc agaaccgaaa ttgtaaagaa agtttgggaa      120
tacattaaaa aacacaactg tcaggatcaa aaaaataaac gtaatatcct tcccgatgcg      180
aatcttgcca aagtcttttg ctctagtgat cctatcgaca tgttccaaat gaccaaagcc      240
ctttccaaac atattgtaaa ataa                                     264

```

<210> 28  
 <211> 87  
 <212> PRT  
 <213> Chlamydia pneumoniae

```

<400> 28
Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro Val Asn Ile
  1          5          10          15
Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr
      20          25          30
Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys Gln
      35          40          45
Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys
      50          55          60
Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met Thr Lys Ala
      65          70          75          80
Leu Ser Lys His Ile Val Lys
          85

```

<210> 29  
 <211> 369  
 <212> DNA  
 <213> Chlamydia pneumoniae

```

<400> 29
atgccacgca tcattggaat tgatattcct gcaaagaaaa agttaaaaat aagtctgaca      60
tatatttatg gaataggatc agctcgttct gatgaaatca ttaaaaagtt gaagtttagt      120

```

```

cctgaggcaa gagcctctga attaactgaa gaagaagtag gacgactgaa ctctctgcta 180
caatcagaat ataccgtaga aggggatttg cgacgtcgtg ttcaatcgga tatcaaaaga 240
ttgatcgcca tccattctta tcgaggtcag agacatagac tttctttacc agtaagagga 300
caacgtacaa aaactaattc tcgtactcga aaaggtaaaa gaaaaacagt cgcaggtaag 360
aagaaataa 369

```

```

<210> 30
<211> 122
<212> PRT
<213> Chlamydia pneumoniae

```

```

<400> 30
Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
1      5      10
Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu
20     25     30
Ile Ile Lys Lys Leu Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu
35     40     45
Thr Glu Glu Glu Val Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr
50     55     60
Thr Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
65     70     75     80
Leu Ile Ala Ile His Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
85     90     95
Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
100    105    110
Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
115    120

```

```

<210> 31
<211> 10
<212> PRT
<213> Artificial Sequence

```

```

<220>
<223> Made in the lab

```

```

<400> 31
Cys Ser Phe Ile Gly Gly Ile Thr Tyr Leu
1      5      10

```

```

<210> 32
<211> 53
<212> PRT
<213> Chlamydia trachomatis

```

```

<400> 32
Leu Cys Val Ser His Lys Arg Arg Ala Ala Ala Ala Val Cys Ser Phe
1      5      10      15
Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile
20     25     30
Leu Phe Val Asn Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Thr
35     40     45
Lys Ala Asn Met Gly
50

```

```

<210> 33

```

<211> 161  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 33  
 atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcatc atcggaggaa 60  
 ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac aaaatgctgg 120  
 caaaaccggt tctttcttcc caaactaaag caaatatggg a 161

<210> 34  
 <211> 53  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 34  
 Leu Cys Val Ser His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile  
 1 5 10 15  
 Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile  
 20 25 30  
 Leu Phe Val Asn Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr  
 35 40 45  
 Lys Ala Asn Met Gly  
 50

<210> 35  
 <211> 55  
 <212> DNA  
 <213> Chlamydia pneumoniae

<400> 35  
 gatatacata tgcataacca tcaccatcac atgagtcaaa aaaaataaaa actct 55

<210> 36  
 <211> 33  
 <212> DNA  
 <213> Chlamydia pneumoniae

<400> 36  
 ctcgaggaa tcttatttta caatatgttt gga 33

<210> 37  
 <211> 53  
 <212> DNA  
 <213> Chlamydia pneumoniae

<400> 37  
 gatatacata tgcataacca tcaccatcac atgccacgca tcattggaat gat 53

<210> 38  
 <211> 30  
 <212> DNA  
 <213> Chlamydia pneumoniae

<400> 38  
 ctcgaggaa tcttatttct tcttacctgc 30

<210> 39  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in the lab

<400> 39  
 Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys Val Phe Gly Thr  
 1 5 10 15

<210> 40  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> made in the lab

<400> 40  
 Lys Arg Asn Ile Leu Pro Asp Ala Asn Leu Ala Lys Val Phe Gly Ser  
 1 5 10 15

<210> 41  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> made in the lab

<400> 41  
 Lys Glu Tyr Ile Asn Gly Asp Lys Tyr Phe Gln Gln Ile Phe Asp  
 1 5 10 15

<210> 42  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> made in the lab

<400> 42  
 Lys Lys Ile Ile Ile Pro Asp Ser Lys Leu Gln Gly Val Ile Gly Ala  
 1 5 10 15

<210> 43  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> made in the lab

<400> 43

Lys Lys Leu Leu Val Pro Asp Asn Asn Leu Ala Thr Ile Ile Gly  
 1 5 10 15

<210> 44  
 <211> 509  
 <212> DNA  
 <213> Chlamydia

<400> 44  
 ggagctcgaa ttcggcacga gagtgcctat tgttttgcag gctttgtctg atgatagcga 60  
 taccgtacgt gagattgctg tacaagtagc tgttatgtat ggttctagtt gcttactgcg 120  
 cgccgtgggc gatttagcga aaaatgattc ttctattcaa gtacgcatca ctgcttatcg 180  
 tgctgcagcc gtgttgaga tacaagatct tgtgcctcat ttacgagttg tagtccaaaa 240  
 tacacaatta gatggaacgg aaagaagaga agcttggaga tctttatgtg ttcttactcg 300  
 gcctcatagt ggtgtattaa ctggcataga tcaagcttta atgacctgtg agatgttaaa 360  
 ggaatatcct gaaaagtgtg cggaagaaca gattcgtaga ttattggctg cagatcatcc 420  
 agaagtgcag gtagctactt tacagatcat tctgagagga ggtagagtat tccggtcatc 480  
 ttctataatg gaatcgggtc tctgcccgg 509

<210> 45  
 <211> 481  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> unsure  
 <222> (23)  
 <223> n=A,T,C or G

<400> 45  
 gatccgaatt cggcacgagg cantattttac tcccaacatt acggttccaa ataagcgata 60  
 aggtcttcta ataaggaagt taatgtaaga ggctttttta ttgcttttcg taaggtagta 120  
 ttgcaaccgc acgcgattga atgatacgca agccatttcc atcatggaaa agaacccttg 180  
 gacaaaaata caaaggaggt tcaactcctaa ccagaaaaag ggagagttag tttccatggg 240  
 ttttccttat atacacccgt ttcacacaat taggagccgc gtctagtatt tggaatacaa 300  
 attgtcccca agcgaatttt gttcctgttt cagggatttc tctaattgt tctgtcagcc 360  
 atccgcctat ggtaacgcaa ttagctgtag taggaagatc aactccaaac aggtcataga 420  
 aatcagaaaag ctcatagggt cctgcagcaa taacaacatt cttgtctgag tgagcgaatt 480  
 g 481

<210> 46  
 <211> 427  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> unsure  
 <222> (20)  
 <223> n=A,T,C or G

<400> 46  
 gatccgaatt cggcacgagn tttttcctgt tttttcttag tttttagtgt tcccggagca 60  
 ataacacaga tcaaagaacg gccattcagt ttaggctctg actcaacaaa acctatgtcc 120  
 tctaagccct gacacattct ttgaacaacc ttatgcccggt gttcgggata agccaactct 180  
 cgccccgaa acatacaaga aacctttact ttatttcctt tctcaataaa ggctctagct 240  
 tgctttgctt tcgtaagaaa gtcgttatca tcgatattag gcttaagctt aacctctttg 300  
 atacgcactt ggtgctgtgc tttcttacta tctttttctt ttttagttat gtcgtaacga 360

tacttcccgt agtccatgat ttgacacaca ggaggctctg agtttgaagc aacctcgtgc 420  
cgaattc 427

<210> 47  
<211> 600  
<212> DNA  
<213> Chlamydia  
  
<220>  
<221> unsure  
<222> (522)  
<223> n=A,T,C or G

<400> 47  
gatccgaatt cggcacgaga tgcttctatt acaattgggtt tggatgcgga aaaagcttac 60  
cagcttattc tagaaaagtt gggagatcaa attcttgggtg gaattgctga tactattggt 120  
gatagtacag tccaagatat tttagacaaa atcacaacag acccttctct aggtttgttg 180  
aaagctttta acaactttcc aatcactaat aaaattcaat gcaacgggtt attcactccc 240  
aggaacattg aaactttatt aggaggaact gaaataggaa aattcacagt cacacccaaa 300  
agctctggga gcatgttctt agtctcagca gatattattg catcaagaat ggaaggcggc 360  
gttgttctag ctttgggtacg agaaggtgat tctaagccct acgcgattag ttatggatac 420  
tcacaggcg ttcctaattt atgtagtcta agaaccagaa ttattaatac aggattgact 480  
ccgacaacgt attcattacg tgtaggcggg ttagaaagcg gngtgggatg ggttaatgcc 540  
ctttctaattg gcaatgatat tttaggaata acaaatcttc taatgtatct tttttggagg 600

<210> 48  
<211> 600  
<212> DNA  
<213> Chlamydia

<400> 48  
ggagctcgaa ttccgcacga gctctatgaa tatccaattc tctaaactgt tcggataaaa 60  
atgatgcagg aattaggtcc acactatctt tttttgtttc gcaaattgatt gattttaaat 120  
cgtttgatgt gtatactatg tcgtgtaagc ctttttgggtt acttctgaca ctagccccc 180  
atccagaaga taaattggat tgccgggtcta ggtcagcaag taacactttt tcccttaaaa 240  
attgggccaa gttgcatccc acgttttagag aaagtgttgt ttttccagtt cctcccttaa 300  
aagagcaaaa aactaagggtg tgcaaatcaa ctccaacggt agagtaagtt atctattcag 360  
ccttggaaaa catgtctttt cttagacaaga taagcataat caaagccttt tttagcttta 420  
aactgttatc ctctaatttt tcaagaacag gagagtctgg gaataatcct aaagagtttt 480  
ctatttggtg aagcagtcct agaattagtg agacactttt atggtagagt tctaaggagg 540  
aatttaagaa agttactttt tccttgttta ctcgatattt taggtctaatt tcggggaaat 600

<210> 49  
<211> 600  
<212> DNA  
<213> Chlamydia

<400> 49  
gatccgaatt cggcacgaga tgcttctatt acaattgggtt tggatgcgga aaaagcttac 60  
cagcttattc tagaaaagtt gggagatcaa attcttgggtg gaattgctga tactattggt 120  
gatagtacag tccaagatat tttagacaaa atcacaacag acccttctct aggtttgttg 180  
aaagctttta acaactttcc aatcactaat aaaattcaat gcaacgggtt attcactccc 240  
aggaacattg aaactttatt aggaggaact gaaataggaa aattcacagt cacacccaaa 300  
agctctggga gcatgttctt agtctcagca gatattattg catcaagaat ggaaggcggc 360  
gttgttctag ctttgggtacg agaaggtgat tctaagccct acgcgattag ttatggatac 420  
tcacaggcg ttcctaattt atgtagtcta agaaccagaa ttattaatac aggattgact 480  
ccgacaacgt attcattacg tgtaggcggg ttagaaagcg gtgtgggatg ggttaatgcc 540

ctttctaattg gcaatgatat ttttaggaata acaaatactt ctaatgtatc ttttttggag 600

<210> 50

<211> 406

<212> DNA

<213> Chlamydia

<400> 50

```

gatccgaatt cggcacgagt tcttagcttg cttaattacg taattaacca aactaaaggg 60
gctatcaaatt agcttattca gtctttcatt agttaaacga tcttttctag ccatgactca 120
tcctatgttc ttcagctata aaaatacttc ttaaaacttg atatgctgta atcaaactcat 180
cattaaccac aacataatca aattcgctag cggcagcaat ttcgacagcg ctatgctcta 240
atctttcttt cttctggaaa tctttctctg aatcccgagc attcaaacgg cgctcaagtt 300
cttcttgaga gggagcttga ataaaaatgt gactgccggc atttgcttct tcagagccaa 360
agtccttgt acatcaatca cggctatgca gtctcgtgcc gaattc 406

```

<210> 51

<211> 602

<212> DNA

<213> Chlamydia

<400> 51

```

gatccgaatt cggcacgaga tatttttagac aaaatcacia cagacccttc tctaggtttg 60
ttgaaagctt ttaacaactt tccaatcact aataaaattc aatgcaacgg gttattcact 120
cccaggaaca ttgaaacttt attaggagga actgaaatag gaaaattcac agtcacaccc 180
aaaagctctg ggagcatgtt cttagtctca gcagatatta ttgcatcaag aatggaaggc 240
ggcgttgttc tagctttggt acgagaaggt gattctaagc cctacgcgat tagttatgga 300
tactcatcag gcgttcctaa tttatgtagt ctaagaacca gaattattaa tacaggattg 360
actccgacaa cgtattcatt acgtgtaggc ggtttagaaa gcggtgtggt atgggttaat 420
gccctttcta atggcaatga tatttttagga ataacaataa cttctaattg atcttttttg 480
gaggtaatac ctcaaacaaa cgcttaacaa atttttattg gatttttctt ataggtttta 540
tatttagaga aaaaagttcg aattacgggg tttgttatgc aaaataaact cgtgccgaat 600
tc 602

```

<210> 52

<211> 145

<212> DNA

<213> Chlamydia

<400> 52

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gatccgaatt cggcacgagc tcgtgccgat gtgttcaaca gcatccatag gatgggcagt 60
caaataact ccaagtaatt ctttttctct tttcaacaac tccttaggag agcgttggat 120
aacattttca gctcgtgccg aattc 145

```

<210> 53

<211> 450

<212> DNA

<213> Chlamydia

<400> 53

```

gatccgaatt cggcacgagg taatcggcac cgcactgctg acactcatct cctcgagctc 60
gatcaaacc acacttgga caagtaccta caacataacg gtccgctaaa aacttccctt 120
cttcctcaga atacagctgt tcggtcacct gattctctac cagtcgcgct tctgcaagt 180
ttcgatagaa atcttgaca atagcaggat gataagcgtt cgtagtctct gaaaagaaat 240
ctacagaaat tcccaatttc ttgaaggat ctttatgaag cttatgatac atgtcgacat 300
attcttgata ccccatgcct gccaaactct cattaagggt aattgcgatt ccgtattcat 360
cagaaccaca aatatacaaa acctctttgc cttgtagtct ctgaaaacgc gcataaacat 420

```

ctgcaggcaa ataagcctcg tgccgaattc

450

&lt;210&gt; 54

&lt;211&gt; 716

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 54

```

gatcgaaatt cggcagcagc ggcacgagtt ttctgatagc gattttacaat cttttattca 60
acttttgcct agagaggcac actatactaa gaagtttctt ggggtgtgtg cacagtcctg 120
tcgtcagggg attctgctag aggggtaggg gaaaaaaccc ttattactat gaccatgcgc 180
atgtggaatt acattccata gactttcgca tcattcccaa catttacaca gctctacacc 240
tcttaagaag aggtgacgtg gattgggtgg ggcagccttg gcaccaaggg attccttttg 300
agcttcggac tacctctgct ctctacacc attacacctg agatggcaca ttctggctta 360
ttcttaatcc caaagatcct gtactttcct ctctatctaa tcgtcagcga ttgattgctg 420
ccatccaaaa ggaaaaactg gtgaagcaag ctttaggaac acaatatcga gtagctgaaa 480
gctctccatc tccagaggga atcatagctc atcaagaagc ttctactcct tttcctggga 540
aaattacttt gatatatccc aataatatta cgcgctgtca gcgtttggcc gaggtatcca 600
aaaaatgatc gacaaggagc acgctaaatt tgtacatacc ccaaaatcaa tcagccatct 660
aggcaaatgg aatatcaaag taaacagtat acaactgggg atctcgtgcc gaattc 716

```

&lt;210&gt; 55

&lt;211&gt; 463

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 55

```

tctcaaatcc ttgctttgaa taatccagat atttcaaaaa ccatgttcga taaattcacc 60
cgacaaggac tccgtttcgt actagaagcc tctgtatcaa atattgagga tataggagat 120
cgcgttcggg taactatcaa tgggaatgtc gaagaatacg attacgttct cgtatctata 180
ggacgccggt tgaatacaga aaatattggc ttggataaag ctgggtgttat ttgtgatgaa 240
cgcggagtca tccctaccga tgccacaatg cgcacaaacg tacctaacat ttatgctatt 300
ggagatatca caggaaaatg gcaacttgcc catgtagctt ctcatcaagg aatcattgca 360
gcacggaata taggtggcca taaagaggaa atcgattact ctgctgtccc ttctgtgatc 420
tttaccttcc ctgaagtgcg ttcagtaggc ctctcccca cag 463

```

&lt;210&gt; 56

&lt;211&gt; 829

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 56

```

gtactatggg atcattagtt ggaagacagg ctccggattt ttctggtaaa gccgttggtt 60
gtggagaaga gaaagaaatc tctctagcag actttcgtgg taagtatgta gtgctcttct 120
tttatcctaa agattttacc tatgtttgtc ctacagaatt acatgctttt caagatagat 180
tggtagattt tgaagagcat ggtgcagtcg tccttgggtg ctccgttgac gacattgaga 240
cacattctcg ttggctcact gtagcgagag atgcaggagg gatagaggga acagaatatac 300
ctctgttagc agacccctct tttaaaatat cagaagcttt tgggtgtttg aatcctgaag 360
gatcgctcgc tttaaagagct actttcctta tcgataaaca tgggggttatt cgtcatgcgg 420
ttatcaatga tcttcttcta gggcgttcca ttgacgagga attgcgtatt ttagattcat 480
tgatcttctt tgagaaccac ggaatgggtt gtccagctaa ctggcgcttct ggagagcggtg 540
gaatggtgcc ttctgaagag ggattaaaag aatacttoca gacgatggat taagcatctt 600
tgaaagtaag aaagtcgtac agatcttgat ctgaaaagag aagaaggctt tttaattttc 660
tgcagagagc cagcgagggt tcaataatgt tgaagtctcc gacaccaggc aatgctaagg 720
cgacgatatt agttagttaa gtctgagtat taaggaaatg aaggccaaag aaatagctat 780
caataaagaa gccttcttcc ttgactctaa agaatagtat gtcgtatcc 829

```



<210> 57  
 <211> 1537  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 57  
 acatcaagaa atagcggact cgccttttagt gaaaaaagct gaggagcaga ttaatcaagc 60  
 acaacaagat attcaaacga tcacacctag tggtttggat attcctatcg ttgggtccgag 120  
 tgggtcagct gcttccgcag gaagtgcggc aggagcgttg aaatcctcta acaattcagg 180  
 aagaatttcc ttgttgcttg atgatgtaga caatgaaatg gcagcgattg caatgcaagg 240  
 ttttcgatct atgatcgaac aatttaattgt aaacaatcct gcaacagcta aagagctaca 300  
 agctatggag gtcagctga ctgcgatgtc agatcaactg gttgggtgcgg atggcgagct 360  
 cccagccgaa atacaagcaa tcaaagatgc tcttgcgcaa gctttgaaac aaccatcagc 420  
 agatggttta gctacagcta tgggacaagt ggcttttgca gctgccaaagg ttggaggagg 480  
 ctccgcagga acagctggca ctgtccagat gaatgtaaaa cagctttaca agacagcgtt 540  
 ttcttcgact tcttccagct cttatgcagc agcactttcc gatggatatt ctgcttaca 600  
 aacactgaac tctttatatt ccgaaagcag aagcggcgtg cagtcagcta ttagtcaaac 660  
 tgcaaatccc gcgctttcca gaagcgtttc tcgttctggc atagaaagtc aaggacgcag 720  
 tgcagatgct agccaaagag cagcagaaac tattgtcaga gatagccaaa cgtaggtga 780  
 tgtatatagc cgcttacagg ttctggattc tttgatgtct acgattgtga gcaatccgca 840  
 agcaaatcaa gaagagatta tgcagaagct cacggcatct attagcaaag ctccacaatt 900  
 tgggtatcct gctgttcaga attctgtgga tagcttgcag aagtttgctg cacaattgga 960  
 aagagagttt gttgatggg aacgtagtct cgcagaatct caagagaatg cgtttagaaa 1020  
 acagcccgtt ttcatccaac aggtgttggt aaacattgct tctctattct ctgggttatct 1080  
 ttcttaacgt gtgattgaag tttgtgaatt gagggggagc caaaaaagaa tttctttttt 1140  
 ggctcttttt tcttttcaaa ggaatctcgt gtctacagaa gtcttttcaa taataagttc 1200  
 ttagttccaa aagaagaaaa tatataaaag aaaaaactcc taattcattt aaaaagtgtc 1260  
 cggcagactt cgtggaaaat gtctgtaaaag ctggagggga atcagcagaa agatgcaaga 1320  
 tatccgagaa aaaaggctca ggctcgtgcc gaattcggca cgagactacg aaagaaagg 1380  
 cttttctttt ggaatctgtc attggatctg cgtaagactt aaagttcggc aacacaggct 1440  
 ctgtcttctc tttaggtttc ttgcgcgaga aaaattttct caagtaacaa gaagatttct 1500  
 ttttacagcc ggcacccggc ttctcgcgaa gtataac 1537

<210> 58  
 <211> 463  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 58  
 tctcaaatcc ttgctttgaa taatccagat atttcaaaaa ccatgttcga taaattcacc 60  
 cgacaaggac tccgtttcgt actagaagcc tctgtatcaa atattgagga tataggagat 120  
 cgcgttcggt taactatcaa tgggaatgtc gaagaatacg attacgttct cgtatctata 180  
 ggacgccgtt tgaatacaga aaatattggc ttggataaag ctggtgttat ttgtgatgaa 240  
 cgcggagtca tccctaccga tgccacaatg cgcacaaacg tacctaacat ttatgctatt 300  
 ggagatatca caggaaaaat gcaacttgcc catgtagctt ctcacaaagg aatcattgca 360  
 gcacggaata taggtggcca taaagaggaa atcgattact ctgctgtccc ttctgtgac 420  
 tttaccttcc ctgaagtcgc ttcagtaggc ctctcccaa cag 463

<210> 59  
 <211> 552  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 59  
 acattcctcc tgctcctcgc ggccatccac aaattgaggt aaccttcgat attgatgcc 60  
 acggaatttt acacgtttct gctaaagatg ctgctagtgg acgcaacaa aaaatccgta 120  
 ttgaagcaag ctctggatta aaagaagatg aaattcaaca aatgatccgc gatgcagagc 180

```

ttcataaaga ggaagacaaa caacgaaaag aagcttctga tgtgaaaaat gaagccgatg 240
gaatgatctt tagagccgaa aaagctgtga aagattacca cgacaaaatt cctgcagaac 300
ttgttaaaga aattgaagag catattgaga aagtacgcca agcaatcaaa gaagatgctt 360
ccacaacagc tatcaaagca gcttctgatg agttgagtac tcgtatgcaa aaaatcggag 420
aagctatgca ggctcaatcc gcacccgcag cagcatcttc tgcagcgaat gctcaaggag 480
ggccaaacat taactccgaa gatctgaaaa aacatagttt cagcacacga cctccagcag 540
gaggaagcgc ct                                     552

```

<210> 60

<211> 1180

<212> DNA

<213> Chlamydia trachomatis

<400> 60

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atcctagcgg taaaactgct tactggtcag ataaaatcca tacagaagca acacgtactt 60
cttttaggag aaaaaatcta taatgctaga aaaatcctga gtaaggatca cttctcctca 120
acaacttttt catcttggat agagttagtt tttagaacta agtcttctgc ttacaatgct 180
cttgcatatt acgagctttt tataaacctc cccaaccaa ctctacaaa agagtttcaa 240
tcgatccctt ataaatccgc atatatattt gccgctagaa aaggcgattt aaaaaccaag 300
gtcgatgtga tagggaaagt atgtggaatc tcgtgccgaa ttcggcacga gcggcacgag 360
gatgtagagt aattagttaa agagctgcac aattatgaca aagcatggaa aacgcattcg 420
tggtatccaa gagacttacg atttagctaa gtcgtattct ttgggtgaag cgatagatat 480
tttaaaacag tgctctactg tcggtttcga tcaaacggtt gatgtgtctg ttaaattagg 540
gatcgatcca agaaagagtg atcagcaaat tcgtgggttc gtttctttac ctcacggtac 600
aggtaaagtt ttgcgaattt tagtttttgc tgctggagat aaggctgcag aggctattga 660
agcaggagcg gactttgttg gtagcgacga cttggtagaa aaaatcaaag gtggatgggt 720
tgacttcgat gttgcggttg ccactcccga tatgatgaga gaggtcggaa agctaggaaa 780
agtttttagt ccaagaaacc ttatgcctac gcctaaagcc ggaactgtaa caacagatgt 840
ggttaaaact attgcggaac tgcgaaaagg taaaattgaa tttaaagctg atcgagctgg 900
tgtatgcaac gtcggagttg cgaagctttc tttcgatagt gcgcaaatca aagaaaatgt 960
tgaagcgttg tgtgcagcct tagttaaagc taagcccgca actgctaaag gacaatattt 1020
agtttaattt actatttcct cgaccatggg gccaggggtt accgtggata ctaggagggt 1080
gattgcgtta taattctaag tttaaagagg aaaaatgaaa gaagagaaaa agttgctgct 1140
tcgcgaggtt gaagaaaaga taaccgcttc tcggcacgag                                     1180

```

<210> 61

<211> 1215

<212> DNA

<213> Chlamydia trachomatis

<400> 61

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attacagcgt gtgcaggtaa cgacatcatt gcattgatgt tttgatggca ttgatgcggc 60
attccttata gggtcagttc ctagaggccc aggaatggag agaagagatc ttctaaagaa 120
aaatggggag attgttgcta cgcaaggaaa agctttgaac acaacagcca agcgggatgc 180
aaagattttt gttgttgga accctgtgaa taccaattgc tggatagcaa tgaatcatgc 240
tcccagatta ttgagaaaga actttcatgc gatgctacga ttggaccaga atcgatgca 300
tagcatgtta tcgcatagag cagaagtacc tttatcggct gtatcacaag ttgtggtttg 360
gggaaatcac tccgcaaac aagtgcctga ttttacgcaa gctctgatta atgaccgctc 420
tatcgagag acgatagcgg atcgtgattg gttagagaat attatgggtc cttctgtaca 480
gagtcgtggg agtgcagtaa ttgaagcacg aggggaagtct tcggcagctt ctgcagcacg 540
agcttttagc gaggtcgtc gatcaatata tcagccaaaa gaaggactcg tgccgaattc 600
ggcacgagta tcgaaattgc aggcatttct agtgaatggt cgtatgctta taaactacgt 660
ggtacagact tgagctctca aaagtttgct acagattctt acatcgaga cccttattct 720
aagaatatct actccctca actatttgga tcccctaaac aagaaaagga ttacgcattt 780
agttacctga aatatgagga ttttgactgg gaaggcgaca ctcctttgca cttccaaaa 840
gaaaattact tcatattga aatgcattgt cggtcattca cccgagatcc gtcttcccag 900
gtttcccatc ctggaacttt ccttggtatc atcgaaaaaa tagaccacct caaacaacta 960

```

```

ggcgttcatg cagttgaact ccttcttatt ttccaattcg atgaaaccgt ccatccattt 1020
aaaaatcagg acttccccca cctgtgtaac tattgggggt attcttcggt gaattttttc 1080
tgcccccttc gccggttatac ttatggggca gacccttgcg ctccggcccg agagttcaag 1140
actcttgta aagcggttaca ccgtgcggga atcgaagtca ttctcgatgt cgttttcaat 1200
catacaggct ttgaa 1215

```

<210> 62  
 <211> 688  
 <212> DNA  
 <213> Chlamydia trachomatis

```

<400> 62
gtggatccaa aaaagaatct aaaaagccat acaaagattg cgttacttct tgcgatgcct 60
ctaacacttt atcagcgta cttttgagaa gcacttcaat gagcgctttt tcttctctag 120
catgcccgcac atccgcttct tcatgttctg tgaaatatgc atagtcttca ggattggaaa 180
atccaaagta ctcaagtcaat ccacgaattt tctctctagc gatacgtgga atttgactct 240
cataagaata caaagcagcc actcctgcag ctaaagaatc tcctgtacac caccgcatga 300
aagtagctac tttcgctttt gctgcttcac taggctcatg agcctctaac tcttctggag 360
taactcctag agcaaacaca aactgcttcc acaaatcaat atgattaggg taaccgttct 420
cttcatccat caagttatct aacaataact tacgcgcctc taaatcatcg caacgactat 480
gaatcgcaga taaatattta ggaaaggctt tgatatgtaa ataatagtct ttggcacgag 540
cctgtaattg ctcttttagta agtccccctc tcgaccattt cacataaaac gtgtgttcta 600
gcatatgctt attttgaata attaaatcta actgatctaa aaaattcata aacacctcca 660
tcatttcttt tcttgactcc acgtaacc 688

```

<210> 63  
 <211> 269  
 <212> DNA  
 <213> Chlamydia trachomatis

```

<400> 63
atgttgaaat cacacaagct gttcctaaat atgctacggg aggatctccc tatcctgttg 60
aaattactgc tacaggtaaa agggattgtg ttgatgttat cattactcag caattaccat 120
gtgaagcaga gttcgtacgc agtgatccag cgacaactcc tactgctgat ggtaagctag 180
tttgaaaaat tgaccgctta ggacaaggcg aaaagagtaa aattactgta tgggtaaaac 240
ctcttaaaga aggttgctgc tttaacagct 269

```

<210> 64  
 <211> 1339  
 <212> DNA  
 <213> Chlamydia trachomatis

```

<400> 64
cttttattat ggcttctggg gatgatgtca acgatatcga cctgctatct cgaggagatt 60
ttaaatttgt tatacagacg gctccagagg agatgcatgg attagcggac tttttggctc 120
ccccggcgaa ggatcttggg attctctccg cctgggaagc tgggtgagctg cgttacaaac 180
agctagttaa tccttaggaa acatttctgg acctatgcc atcacattgg ctccgtgac 240
cacatagaga gtttctcccg taattgcgct agctagggga gagactaaga aggctgctgc 300
tgcgctact tgctcagctt ccattggaga aggtagtggg gccagctctt ggtagtaatc 360
caccattctc tcaataaatc caatagcttt tctgcacggg ctagtcaatg gccctgccga 420
gatagtattc actcggactc cccaacgtcg gccggcttcc caagccagta cttttgtatc 480
actttctaaa gcagcttttg ctgcgttcat tctccgccca taccctggaa cagcacgcat 540
ggaagcaaga taagttagag agatggtgct agctcctgca ttcataattg ggccaaaatg 600
agagagaagg ctgataaagg agtagctgga tgtacttaag gcggcaagat agcctttacg 660
agaggtatca agtaattggt tagcaatttc cggactgttt gctaaagagt gaacaagaat 720
atcaatgtgt ccaaaatctt tttcacctg ttctacaact tcggatacag tgtaccaga 780
aagatctttg taacgtttat tttccaaaat ttctgagga atatcttctg ggggtgtcgaa 840

```

```

actggcatcc atgggataga ttttagcgaa agttagcaat tctccattgg agagttcacg 900
agatgcattg aattttccta actcccaaga ttgagagaaa attttataga taggaaccca 960
ggtccccaca agtatgggtg cgctgtcttc tgctaacatt ttggcaatgc ccagccata 1020
cccgttatca tcgctatg cggctatgaa agcaattttt cctgttaa- caattttcaa 1080
catgagctaa ccccatTTTg tcttcttgag agaggagagt agcagattct ttattattga 1140
gaaacgggccc tcataatata taaggagtag attcactggc tggatccagg tttctagagt 1200
aaagagtttc cttgtcaaat tcttatatgg gtagagttaa tcaactgttt tcaagtgatt 1260
tatgtttatt ttaaaataat ttgttttaac aactgtttaa tagttttaat ttttaaagtg 1320
tgaaaaacag gttttatat                                     1339

```

&lt;210&gt; 65

&lt;211&gt; 195

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 65

```

Met Gly Ser Leu Val Gly Arg Gln Ala Pro Asp Phe Ser Gly Lys Ala
      5                                10                                15

Val Val Cys Gly Glu Glu Lys Glu Ile Ser Leu Ala Asp Phe Arg Gly
      20                                25                                30

Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val Cys
      35                                40                                45

Pro Thr Glu Leu His Ala Phe Gln Asp Arg Leu Val Asp Phe Glu Glu
      50                                55                                60

His Gly Ala Val Val Leu Gly Cys Ser Val Asp Asp Ile Glu Thr His
      65                                70                                75                                80

Ser Arg Trp Leu Thr Val Ala Arg Asp Ala Gly Gly Ile Glu Gly Thr
      85                                90                                95

Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe
      100                                105                                110

Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu
      115                                120                                125

Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu Pro
      130                                135                                140

Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu Ile
      145                                150                                155                                160

Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser Gly
      165                                170                                175

Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe Gln
      180                                185                                190

Thr Met Asp
      195

```

&lt;210&gt; 66

<211> 520  
 <212> DNA  
 <213> Chlamydia

<400> 66  
 gatccgaatt cggcagcagg aggaatggaa gggccctccg attttaaate tgctaccatg 60  
 ccattcacta gaaactccat aacagcgggt ttctctgatg gcgagtaaga agcaagcatt 120  
 tgatgtaaat tagcgcaatt agagggggat gaggttactt ggaaatataa ggagcgaagc 180  
 gatgaaggag atgtatttgc tctggaagca aagggttctg aagctaacag aacattgcgt 240  
 cctccaacaa tcgcctgagg attctggctc atcagttgat gctttgcctg aatgagagcg 300  
 gacttaagtt tcccatcaga gggagctatt tgaattagat aatcaagagc tagatccttt 360  
 attgtgggat cagaaaaatt acttgtgagc gcatcgagaa tttcgtcaga agaagaatca 420  
 tcatcgaacg aatttttcaa tcctcgaaaa tcttctccag agacttcgga aagatctttt 480  
 gtgaaacgat cttcaagagg agtatcgctt ttttctctg 520

<210> 67  
 <211> 276  
 <212> DNA  
 <213> Chlamydia

<400> 67  
 gatccgaatt cggcagcagg tattgaagga gaaggatctg actcgatcta tgaaatcatg 60  
 atgcctatct atgaagttat gaatatggat ctagaacacac gaagatcttt tgcggtacag 120  
 caagggcact atcaggaccc aagagcttca gattatgacc tcccacgtgc tagcgactat 180  
 gatttgctta gaagcccata tcctactcca cttttgcctt ctatatatca gctacagaat 240  
 atggatgtag aagcagggtt ccgtgaggca gtttat 276

<210> 68  
 <211> 248  
 <212> DNA  
 <213> Chlamydia

<400> 68  
 gatccgaatt cggcagcagg tgttcaagaa tatgtccttc aagaatgggt taaattgaaa 60  
 gatctaccgg tagaagagtt gctagaaaaa cgatatcaga aattccgaac gataggtcta 120  
 tatgaaactt cttctgaaag cgattctgag gcataagaag catttagttt tattcggttt 180  
 ttctctttta tccatattag ggctaacgat aacgtctcaa gcagaaattt tttctctagg 240  
 tcttattg 248

<210> 69  
 <211> 715  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> unsure  
 <222> (34)  
 <223> n=A,T,C or G

<400> 69  
 gatccgaatt cggcagcaga aggtagatcc gatntcagca aaagtgcctc taaaggaaga 60  
 ttccttcggg atcctgcagc aaataagggt gcacactcca tctcggacag tttgagcttt 120  
 attttcatat agttttcgac ggaactcttt attaaactcc caaaaccgaa tgtagtcgt 180  
 gtgggtgatg cctatatggt aagggagggt tttggcttcg agaattattg tgatcatttt 240  
 ttgtacgaca aaattagcta atgcaggagc ctctgggggg aagtatgcat ctgatgttcc 300  
 atcttttcgg atgctagcaa cagggacaaa ataatctcct atttggtagt gggatcttaa 360  
 gcctccgcac atgccaacaa tgatcgctgc tgtagcattg ggaaggaaag aacacagatc 420

```

tacggtaaga gctgctcctg gagagcctaa tttaaaatcg atgattgagg tgtgaatttg 480
aggcgcatgc gctgccgaaa acatggatcc tcgagaaaca gggacctgat agatttcagc 540
gaaaacatcc acggtaatac ccmataattag taagaaggag atagggctgg aactcttgaa 600
tggtagagcc ggtatagcgc tctagcatgt cacaggcgat tgtttcttcg ctgatttttt 660
tatgttgatg ggtcataaat cacagatatt ataatggtta gagaatcttt ttttc 715

```

```

<210> 70
<211> 323
<212> DNA
<213> Chlamydia

```

```

<400> 70
gatccgaatt cggcagcagc agaacgtaaa cagcacactt aaaccgtgta tgaggtttaa 60
cactgttttg caagcaaaca accattcttc tttccacatc gttcttacca atacctctga 120
ggagcaatcc aacattctct cctgcacgac cttctgggag ttcttttctg aacatttcaa 180
ccccagtaac aatcgtttct ttagtatctc taagaccgac caactgaact ttatcggaaa 240
ctttaacaat tccacgctca atacgtccag ttactacagt tcctcgcccg gagatagaga 300
acacgtcttc aatgggcatt aag 323

```

```

<210> 71
<211> 715
<212> DNA
<213> Chlamydia

```

```

<400> 71
gatccgaatt cggcagcagg aaaaaaagat tctctaacca ttataatata tgtgatttat 60
gacccatcaa cataaaaaaa tcagcgaaga aacaatcgcc tgtgacatgc tagagcggct 120
ataccggctc taccattcaa gagttccagc cctatctcct tcttactaat tttgggtatt 180
acgtggatgt tttcgctgaa atctatcagg tccctgtttc tcgaggatcc atgttttcgg 240
gcagcgcgat cgcctcaaat tcacacctca atcatcgatt tttaaattagg ctctccagga 300
gcagctctta ccgtagatct gtgttctttc cttcccaatg ctacagcagc gatcatgttg 360
ggcatgtgag gaggtttaag atcccactac caaataggag attattttgt cctgtttgct 420
agcatccgaa aagatggaac atcagatgca tacttcccc cagagggtccc tgcattagct 480
aattttgtcg taaaaaaat gatcaccaat attctcgaag ccaaaaacct cccttaccat 540
ataggcatca cccacacgac taacattcgg ttttgggagt ttaataaaga gttccgctga 600
aaactatatg aaaataaagc tcaaactgtc gagatggagt gtgccacctt atttgctgca 660
ggataccgaa ggaatcttcc tttaggagca cttttgctga tatcggatct acctt 715

```

```

<210> 72
<211> 641
<212> DNA
<213> Chlamydia

```

```

<220>
<221> unsure
<222> (550)
<223> n=A, T, C or G
<221> unsure
<222> (559)
<223> n=A, T, C or G
<221> unsure
<222> (575)
<223> n=A, T, C or G
<221> unsure
<222> (583)
<223> n=A, T, C or G
<221> unsure

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<222> (634)  
 <223> n=A,T,C or G  
 <221> unsure  
 <222> (638)  
 <223> n=A,T,C or G

<400> 72  
 gatccgaatt cggcacgaga tctcctcgag ctcgatcaaa cccacacttg ggacaagtac 60  
 ctacaacata acgggtccgct aaaaacttcc cttcttctc agaatacagc tggttcggtca 120  
 cctgattctc taccagtccg cggttcctgca agtttcgata gaaatcttgc acaatagcag 180  
 gatgataagc gttcgtagtt ctggaaaaga aatctacaga aattcccaat ttcttgaagg 240  
 tatctttatg aagcttatga tacatgtcga catattcttg ataccccatg cctgccaaact 300  
 ctgcattaag ggtaattgcg attccgtatt catcagaacc acaaataatac aaaacctctt 360  
 tgccttgtag tctctgaaaa cgcgcataaa catctgcagg caaataagca ccggtaatat 420  
 gtccaaaatg caaaggacca tttgcgtaag gcaacgcaga agtaataaga atacgggaag 480  
 attccactat ttacgctcgc tccagttgta cagagaagga tcttttcttc tggatgttcc 540  
 gaaaccttgn tctcttcgnc tctctcctgt agcanacaaa tgnctctctc gacatctctt 600  
 tcagcgtatt cggactgatg ccctaaagat cccnggangt t 641

<210> 73  
 <211> 584  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> unsure  
 <222> (460)  
 <223> n=A,T,C or G  
 <221> unsure  
 <222> (523)  
 <223> n=A,T,C or G  
 <221> unsure  
 <222> (541)  
 <223> n=A,T,C or G  
 <221> unsure  
 <222> (546)  
 <223> n=A,T,C or G

<400> 73  
 gaattcggca cgagacattt ctagaatgga accggcaaca aacaaaaact ttgtatctga 60  
 agatgacttt aagcaatctt tagataggga agatTTTTTg gaatgggtct ttttatttgg 120  
 gacttattac ggaacgagta aggcggagat ttctagagtt ctgcaaaagg gtaagcactg 180  
 catagccgtg attgatgtac aaggagcttt ggctctgaag aagcaaatgc cggcagtcac 240  
 tatttttatt caagctccct ctcaagaaga acttgagcgc cgtttgaatg ctcgggattc 300  
 agagaaagat ttccagaaga aagaaagatt agagcatagc gctgtcgaaa ttgctgccgc 360  
 tagcgaattt gattatgttg tggttaatga tgatttgatt acagcatatc aagttttaag 420  
 aagtattttt atagctgaag aacataggat gagtcatggn tagaaaagat cgtttaacta 480  
 atgaaagact gaataagcta tttgatagcc cctttagttt ggntaattac gtaattaagc 540  
 nagctnagaa caaaattgct agaggagatg ttcgttcttc taac 584

<210> 74  
 <211> 465  
 <212> DNA  
 <213> Chlamydia

<400> 74  
 gatccgaatt cggcacgagc tcgtgccggt tgggatcgtg taatcgcac ggagaatggt 60

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taagaaatta ttttcgagtg aaagagctag gcgtaatcat tacagatagc catactactc 120
caatgcggcg tggagtactg ggtatcgggc tgtgttggtg tggattttct ccattacaca 180
actatatagg atcgctagat tgtttcggtc gtcccttaca gatgacgcaa agtaatcttg 240
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tagcggtgat agagcaggca cctaatatgg tctaccattc atatcctact tctcgagaag 360
agtattgttc tttgcgcata gatgaaacag aggacttata cggacctttt ttgcaagcgg 420
ttaccgtgga gtcaagaaaa gaaatgatgg aggtgtttat gaatt 465

```

<210> 75  
 <211> 545  
 <212> DNA  
 <213> Chlamydia

```

<400> 75
gaattcggca cgagatgaaa agttagcgtc acaggggatt ctccctaccaa agaattccga 60
aaagttttct tccaaaaacc tcttcctctc ttgattagtg atccctctgc aactacttta 120
ctatatgttc tgtgaaatat gcatagtctt caggattgga aaatccaaag tactcagtca 180
atccacgaat tttctctcta gcgatacgtg gaatttgact ctcataagaa taaaagcag 240
ccactcctgc agctaaagaa tctcctgtac accaccgcat gaaagtagct actttcgctt 300
ttgctgcttc actaggctca tgagcctcta actcttctgg agtaactcct agagcaaaca 360
caaactgctt ccacaaatca atatgattag ggtaaccgtt ctcttcatcc atcaagttat 420
ctaacaataa cttacgcgcc tctaaatcat cgcaacgact atgaatcgca gataaatatt 480
taggaaaggc tttgatattg aaataatagt ctttggcata cgctgtaat tgctctttag 540
taagc 545

```

<210> 76  
 <211> 797  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> unsure  
 <222> (788)  
 <223> n=A,T,C or G  
 <221> unsure  
 <222> (789)  
 <223> n=A,T,C or G

```

<400> 76
gatccgaatt cggcacgaga tacgctagat gcgataaatg cggataatga ggattatcct 60
aaaccagggtg acttcccacg atcttccttc tctagtaacg ctccctcatgc tccagtacct 120
caatctgaga ttccaacgtc acctacctca acacagcctc catcaccta acttgtaaaa 180
actgtaataa aaagagcgcg cttectttat gcaaaatcaa tttgaacaac tccttactga 240
attagggact caaatcaaca gccctcttac tcttgattcc aataatgcct gtatagttcg 300
ctttggatac aacaatgttg ctgtacaaat tgaagaggat ggtaattcag gatttttagt 360
tgctggagtc atgcttggaa aacttcacga gaataccttt agacaaaaaa ttttcaaagc 420
tgctttgtct atcaatggat ctccgcaatc taatattaaa ggcactctag gatacgggtg 480
aatctctaac caactctatc tctgtgatcg gcttaacatg acctatctaa atggagaaaa 540
gctcgcggct tacttagttc ttttttcgca gcatgccaat atctggatgc aatctatctc 600
aaaaggagaa cttccagatt tacatgctct aggtatgtat cacctgtaaa ttatgccgtc 660
attatcccaa tcccgacgta tcatccagca atcttccatt cgaaagattt ggaatcagat 720
agatacttct cctaagcatg ggggtatgcg tacoggttat ttttctcttc atactcaaaa 780
aaagttgnng ggggaata 797

```

<210> 77  
 <211> 399  
 <212> DNA



## &lt;213&gt; Chlamydia

## &lt;400&gt; 77

```

_cataatgcac accatcacca tcacatgcc cgcacattg gaattgatat tcctgcaaag 60
aaaaagttaa aaataagttc gacatatatt tatggaatag gatcagctcg ttctgatgaa 120
atcattaaaa agttgaagtt agatcctgag gcaagagcct ctgaattaac tgaagaagaa 180
gtaggacgac tgaactctct gctacaatca gaatataccg tagaagggga tttgcgacgt 240
cgtgttcaat cgatatcaaa aagattgatc gccatccatt cttatcgagg tcagagacat 300
agactttctt taccagtaag aggacaacgt acaaaaacta attctcgtac tcgaaaaggt 360
aaaagaaaaa cagtcgcagg taagaagaaa taagaattc 399

```

## &lt;210&gt; 78

## &lt;211&gt; 285

## &lt;212&gt; DNA

## &lt;213&gt; Chlamydia

## &lt;400&gt; 78

```

atgcatcacc atcaccatca catgagtcaa aaaaataaaa actctgcttt tatgcatccc 60
gtgaatattt ccacagattt agcagttata gttggcaagg gacctatgcc cagaaccgaa 120
attgtaaaga aagtttggga atacattaaa aaacacaact gtcaggatca aaaaaataaa 180
cgtaatatcc ttcccgatgc gaatcttgcc aaagtctttg gctctagtga tcctatcgac 240
atgttccaaa tgaccaaaagc cctttccaaa catattgtaa aataa 285

```

## &lt;210&gt; 79

## &lt;211&gt; 950

## &lt;212&gt; DNA

## &lt;213&gt; Chlamydia

## &lt;400&gt; 79

```

aaattaactc gagcacaaat tacggcaatt gctgagcaaa agatgaagga catggatgtc 60
gttcttttag agtccgccga gagaatgggt gaagggactg cccgaagcat ggggtgtagat 120
gtagagtaat tagttaaaga gctgcataat tatgacaaag catggaaaac gcattcgtgg 180
tatccaagag acttacgatt tagctaagtc gtattctttg ggtgaagcga tagatatttt 240
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atgcaacgtc ggagttgcga agctttcttt cgatagtgcg caaatcaaag aaaatggtga 720
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cgaggttgaa gaaaagataa ccgcttctca aggttttatt ttgttgagat 950

```

## &lt;210&gt; 80

## &lt;211&gt; 395

## &lt;212&gt; DNA

## &lt;213&gt; Chlamydia

## &lt;400&gt; 80

```

tttcaaggat tttgttttcc cgatcatctt actaaatgca gctccaacaa tcacatcatg 60
ggctggttta gcatctaagg caacagaagc tcctctgctg taataagtga attcttcaga 120
agtaggtgtt cctacttgcg atagcatcgt tcctagtcct gatatccaca ggttggtata 180
gctaacttca tcaaagcgag ctgatttcat tttatcggtt agcaagcctt gtttgactgt 240
gaccattgac atttgagatc ccagaatcga gttcgcatag aaatgattgt ctctaggtac 300

```

ataagcccat tgtctataag agtcaaattt ccagagcgct gagatcggtc cattttgtag 360  
 ttgatcagga tccagagtga gtgttcctgt atatc 395

<210> 81

<211> 2085

<212> DNA

<213> Chlamydia

<400> 81

atttggcgaa ggagtttggg ctacggctat taataaatca ttcgtgttcg ctgcctccaa 60  
 gaccagattg tgtactttct tatgaagaat ctccatttga gcaaattgtg cgttggggag 120  
 agtctcagtt agaacaattt gctcaagtag gtttagatac aagttggcaa gttgttttcg 180  
 atccaggaat aggatttggg aagactcccg ttcagtcgat gttattgatg gatggagtaa 240  
 agcagtttaa acgtgtttta gagtgtcctg tattaatagg ccattctaga aaatcgtgtt 300  
 tgagtatgtt gggccgattt aatagtgacg atcgtgattg ggaaacgacg ggctgttctg 360  
 tatctcttca tgatcgagga gttgattatc tacgtgtgca tcagggtgaa ggtaacagac 420  
 gtgccttagc cgctgctgct tgggctggta tgtttgtatg atccaagcaa caggatcgt 480  
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 gaatcatccg tttttaattg ggggagcgga gctctttgaa agttttttcc aacaaaacct 780  
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 tgtgttttgc ctaggagtta ctccagaaga gttagaggct catgagccta gtgaagcagc 1980  
 aaaagcgaag gtagctactt tcatgcggtg gtgtacagga gattcttttag ctgcaggagt 2040  
 ggctgctttg tattcttatg agagtcaaat tccacgtatc gcctc 2085

<210> 82

<211> 405

<212> DNA

<213> Chlamydia

<400> 82

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 ttctccctgt cattgggcct gttatatggg agtcggaggg tcttttccgc gcttatattt 180  
 cttcgggtgac tgatggggat ggtaagagcc ataaagtagg atttctaaga attcctacat 240  
 atagttggca ggacatggaa gattttgac cttcaggacc gcctccttgg gaagaattgt 300  
 attggctcca taaagggagg agaaaacttc gatataggga atcgtatcaa ggtgaaagta 360

gcaaaaaata aattagctcc tccattccga actgcagaat ttgat

405

<210> 83  
 <211> 379  
 <212> DNA  
 <213> Chlamydia

<400> 83

|            |            |            |            |             |            |     |
|------------|------------|------------|------------|-------------|------------|-----|
| tataccattc | gtttgaaagt | gcctttgacg | ggagaaagtg | tttttgaaga  | tcaatgcaaa | 60  |
| ggtcgtgtcg | ttttcccttg | ggcagatggt | gacgatcaag | ttttgggttaa | atcagacggg | 120 |
| ttccctacgt | atcacttttg | taatgtagtt | gatgatcatt | tgatggggat  | tacccatgtg | 180 |
| ttgcgagggg | aagagtgggt | aagttctaca | cctaaacacc | ttcttcttta  | caaagctttt | 240 |
| gggtgggagc | ctccgcagtt | tttccatatg | ccgcttcttc | taaatcctga  | tggaagtaag | 300 |
| ctttccaaga | gaaagaatcc | tacttctatt | ttttactatc | gggatgctgg  | atacaaaaaa | 360 |
| gaagcgttca | tgaatttcc  |            |            |             |            | 379 |

<210> 84  
 <211> 715  
 <212> DNA  
 <213> Chlamydia

<400> 84

|            |             |            |             |            |            |     |
|------------|-------------|------------|-------------|------------|------------|-----|
| tcaatcctgt | attaataatt  | ctggttctta | gactacataa  | attaggaacg | cctgatgagt | 60  |
| atccataact | aatcgcgtag  | ggcttagaat | caccttctcg  | taccaaagct | agaacaacgc | 120 |
| cgccttccat | tcttgatgca  | ataatatctg | ctgagactaa  | gaacatgctc | ccagagcttt | 180 |
| tgggtgtgac | tgtgaatttt  | cctatttcag | ttcctcctaa  | taaagtttca | atgttctctg | 240 |
| gagtgaataa | ccggttgcat  | tgaattttat | tagtgattgg  | aaagttgtta | aaagctttca | 300 |
| acaaacctag | agaaggggtct | gttgtgattt | tgtctaaaaat | atcttggact | gtactatcaa | 360 |
| caatagtatc | agcaattcca  | ccaagaattt | gatctcccaa  | cttttctaga | ataagctggt | 420 |
| aagctttttc | cgcattccaaa | ccaattgtaa | tagaagcatt  | ggttgatgga | ttattggaga | 480 |
| ctgttaaaga | tattccatca  | gaagctgtca | ttttggctgc  | gacagggtgt | gatgttgtcc | 540 |
| caaggattat | ttgctgggtcc | ttgagcggct | ctgtcatttg  | cccaactttg | atattatcag | 600 |
| caaagacgca | gttttgagtg  | ttatacaaat | aaaaaccaga  | atttccatt  | ttaaaactct | 660 |
| tttttatatt | gagcttttaa  | taaattaggt | ttttagtttc  | aagtttgcta | ttaat      | 715 |

<210> 85  
 <211> 476  
 <212> DNA  
 <213> Chlamydia

<400> 85

|             |            |             |             |            |            |     |
|-------------|------------|-------------|-------------|------------|------------|-----|
| ctcgtgccgc  | tctgtgccgt | cgtgccggtc  | ttttagaaga  | gcgtgaagct | ttaaataatt | 60  |
| cgattacgtt  | tatcatggat | aagcgttaatt | ggatagaaac  | cgagtctgaa | caggtacaag | 120 |
| tggttttcag  | agatagtaca | gcttgcttag  | gaggaggcgc  | tattgcagct | caagaaattg | 180 |
| tttctattca  | gaacaatcag | gctgggattt  | ccttcgaggg  | aggtaaggct | agtttcggag | 240 |
| gaggatttgc  | gtgtggatct | ttttcttccg  | caggcgggtgc | ttctgtttta | gggactattg | 300 |
| atattttcgaa | gaatttaggc | gcgatttctg  | tctctcgtac  | tttatgtacg | acctcagatt | 360 |
| taggacaaat  | ggagtaccag | ggaggaggag  | ctctatttgg  | tgaaaatatt | tctctttctg | 420 |
| agaatgctgg  | tgtgctcacc | tttaaagaca  | acattgtgaa  | gacttttgct | tcgaat     | 476 |

<210> 86  
 <211> 1551  
 <212> DNA  
 <213> Chlamydia

<400> 86

gcgtatcgat atttcttctg ttacattctt tatagggatt ctggttgctg ttaatgcgct 60

```

aacctactct catgtattac gggattttatc tgtgagtatg gatgcgctgt tttctcgtaa 120
cacgcttgct gttcttttag gtttagtctc tagcgtttta gataatgtgc cattagtcgc 180
tgcaacaata ggtatgtatg acttacctat gaacgatcct ctttggaac tcattgccta 240
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cagttatttt ggaggtctag cagtctattt tctaattgaa aattgtgtga atttgttcgt 420
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ctacatatag ttggcaggac atggaagatt ttgatccttc aggaccgcct c 1551

```

<210> 87

<211> 3031

<212> DNA

<213> Chlamydia

<400> 87

```

atgtaggccc tcaagcgggt ttattgtttag accaaattcg agatctattc gttgggtcta 60
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agaaagatgc agatactctt cccgggaagg tagagcaaag tactttgttc tcagtaacca 180
atcccgtggt tttccaagggt gtggaccaac aggatcaagt ctcttcccaa ggggttaattt 240
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```

```

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ctcgcccggt acttagttct tttttcgcag catgccaaata tctggatgca atctatctca 3000
aaaggagaac ttccagattt acatgctcta g 3031

```

<210> 88  
<211> 976  
<212> DNA  
<213> Chlamydia

```

<400> 88
agggtggatg ggcgcctgtc caagatgtgc tcgctactct atatggaagc aatcacaaag 60
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ggcacaaagt accttctggg cgcactactt taaagattcg tcgtcctttt ggtactacga 180
gagaagttcg tgtgaaatgg cgttatgttc ctgaaggtgt aggagatttg gctaccatag 240
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atgatgcgtt tcatcggtct agttcgctat tctactctcc aatggttccg catttttggg 360
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ctttagattg gttaacctg ttggaaaacg tagacacaaa cgtggagtct cgccttgctc 840
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ctctttttgg ttttga 976

```

<210> 89  
<211> 94  
<212> PRT  
<213> Chlamydia

<400> 89

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | His | His | His | His | His | Met | Ser | Gln | Lys | Asn | Lys | Asn | Ser | Ala |
|     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Phe | Met | His | Pro | Val | Asn | Ile | Ser | Thr | Asp | Leu | Ala | Val | Ile | Val | Gly |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Lys | Gly | Pro | Met | Pro | Arg | Thr | Glu | Ile | Val | Lys | Lys | Val | Trp | Glu | Tyr |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ile | Lys | Lys | His | Asn | Cys | Gln | Asp | Gln | Lys | Asn | Lys | Arg | Asn | Ile | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Pro | Asp | Ala | Asn | Leu | Ala | Lys | Val | Phe | Gly | Ser | Ser | Asp | Pro | Ile | Asp |
|     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Met | Phe | Gln | Met | Thr | Lys | Ala | Leu | Ser | Lys | His | Ile | Val | Lys |     |     |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |     |     |

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<210> 90
<211> 474
<212> PRT
<213> Chlamydia
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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | His | His | His | His | His | His | Met | Asn | Glu | Ala | Phe | Asp | Cys |
|     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Val | Val | Ile | Gly | Ala | Gly | Pro | Gly | Gly | Tyr | Val | Ala | Ala | Ile | Thr | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ala | Gln | Ala | Gly | Leu | Lys | Thr | Ala | Leu | Ile | Glu | Lys | Arg | Glu | Ala | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Thr | Cys | Leu | Asn | Arg | Gly | Cys | Ile | Pro | Ser | Lys | Ala | Leu | Leu | Ala |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gly | Ala | Glu | Val | Val | Thr | Gln | Ile | Arg | His | Ala | Asp | Gln | Phe | Gly | Ile |
|     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| His | Val | Glu | Gly | Phe | Ser | Ile | Asn | Tyr | Pro | Ala | Met | Val | Gln | Arg | Lys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Asp | Ser | Val | Val | Arg | Ser | Ile | Arg | Asp | Gly | Leu | Asn | Gly | Leu | Ile | Arg |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ser | Asn | Lys | Ile | Thr | Val | Phe | Ser | Gly | Arg | Gly | Ser | Leu | Ile | Ser | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Thr | Glu | Val | Lys | Ile | Leu | Gly | Glu | Asn | Pro | Ser | Val | Ile | Lys | Ala | His |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser | Ile | Ile | Leu | Ala | Thr | Gly | Ser | Glu | Pro | Arg | Ala | Phe | Pro | Gly | Ile |
|     | 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Pro | Phe | Ser | Ala | Glu | Ser | Pro | Arg | Ile | Leu | Cys | Ser | Thr | Gly | Val | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |

Asn Leu Lys Glu Ile Pro Gln Lys Met Ala Ile Ile Gly Gly Gly Val  
 180 185 190  
 Ile Gly Cys Glu Phe Ala Ser Leu Phe His Thr Leu Gly Ser Glu Val  
 195 200 205  
 Ser Val Ile Glu Ala Ser Ser Gln Ile Leu Ala Leu Asn Asn Pro Asp  
 210 215 220  
 Ile Ser Lys Thr Met Phe Asp Lys Phe Thr Arg Gln Gly Leu Arg Phe  
 225 230 235 240  
 Val Leu Glu Ala Ser Val Ser Asn Ile Glu Asp Ile Gly Asp Arg Val  
 245 250 255  
 Arg Leu Thr Ile Asn Gly Asn Val Glu Glu Tyr Asp Tyr Val Leu Val  
 260 265 270  
 Ser Ile Gly Arg Arg Leu Asn Thr Glu Asn Ile Gly Leu Asp Lys Ala  
 275 280 285  
 Gly Val Ile Cys Asp Glu Arg Gly Val Ile Pro Thr Asp Ala Thr Met  
 290 295 300  
 Arg Thr Asn Val Pro Asn Ile Tyr Ala Ile Gly Asp Ile Thr Gly Lys  
 305 310 315 320  
 Trp Gln Leu Ala His Val Ala Ser His Gln Gly Ile Ile Ala Ala Arg  
 325 330 335  
 Asn Ile Gly Gly His Lys Glu Glu Ile Asp Tyr Ser Ala Val Pro Ser  
 340 345 350  
 Val Ile Phe Thr Phe Pro Glu Val Ala Ser Val Gly Leu Ser Pro Thr  
 355 360 365  
 Ala Ala Gln Gln Gln Lys Ile Pro Val Lys Val Thr Lys Phe Pro Phe  
 370 375 380  
 Arg Ala Ile Gly Lys Ala Val Ala Met Gly Glu Ala Asp Gly Phe Ala  
 385 390 395 400  
 Ala Ile Ile Ser His Glu Thr Thr Gln Gln Ile Leu Gly Ala Tyr Val  
 405 410 415  
 Ile Gly Pro His Ala Ser Ser Leu Ile Ser Glu Ile Thr Leu Ala Val  
 420 425 430  
 Arg Asn Glu Leu Thr Leu Pro Cys Ile Tyr Glu Thr Ile His Ala His  
 435 440 445  
 Pro Thr Leu Ala Glu Val Trp Ala Glu Ser Ala Leu Leu Ala Val Asp  
 450 455 460  
 Thr Pro Leu His Met Pro Pro Ala Lys Lys  
 465 470

—

Lys

|          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> 92 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met      | His | His | His | His | His | His | Met | Gly | Ser | Leu | Val | Gly | Arg | Gln | Ala |
|          |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Pro      | Asp | Phe | Ser | Gly | Lys | Ala | Val | Val | Cys | Gly | Glu | Glu | Lys | Glu | Ile |
|          |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser      | Leu | Ala | Asp | Phe | Arg | Gly | Lys | Tyr | Val | Val | Leu | Phe | Phe | Tyr | Pro |
|          |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Lys      | Asp | Phe | Thr | Tyr | Val | Cys | Pro | Thr | Glu | Leu | His | Ala | Phe | Gln | Asp |
|          | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Arg      | Leu | Val | Asp | Phe | Glu | Glu | His | Gly | Ala | Val | Val | Leu | Gly | Cys | Ser |
| 65       |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |



Val Asp Asp Ile Glu Thr His Ser Arg Trp Leu Thr Val Ala Arg Asp  
85 90 95

Ala Gly Gly Ile Glu Gly Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser  
100 105 110

Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu  
115 120 125

Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His  
130 135 140

Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu  
145 150 155 160

Arg Ile Leu Asp Ser Leu Ile Phe Phe Glu Asn His Gly Met Val Cys  
165 170 175

Pro Ala Asn Trp Arg Ser Gly Glu Arg Gly Met Val Pro Ser Glu Glu  
180 185 190

Gly Leu Lys Glu Tyr Phe Gln Thr Met Asp  
195 200

<210> 93  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> made in a lab

<400> 93  
Glu Asn Ser Leu Gln Asp Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp  
1 5 10 15  
Asp Lys Leu

<210> 94  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 94  
Asp Pro Thr Asn Lys Arg Asn Ile Asn Pro Asp Asp Lys Leu Ala Lys  
1 5 10 15  
Val Phe Gly Thr  
20

<210> 95  
<211> 20  
<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 95

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Arg | Asn | Ile | Asn | Pro | Asp | Asp | Lys | Leu | Ala | Lys | Val | Phe | Gly | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Glu | Lys | Pro | Ile |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 96

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 96

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asp | Lys | Leu | Ala | Lys | Val | Phe | Gly | Thr | Glu | Lys | Pro | Ile | Asp | Met |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Phe | Gln | Met | Thr |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 97

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 97

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Val | Phe | Gly | Thr | Glu | Lys | Pro | Ile | Asp | Met | Phe | Gln | Met | Thr | Lys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Met | Val | Ser | Gln |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 98

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 98

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Lys | Arg | Asn | Ile | Asn | Pro | Asp | Asp | Lys | Leu | Ala | Lys | Val | Phe | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr | Glu | Lys | Pro |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 99

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 99

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Lys | Arg | Asn | Ile | Leu | Pro | Asp | Ala | Asn | Leu | Ala | Lys | Val | Phe | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

<210> 100

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 100

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Met | Trp | Asp | Tyr | Ile | Lys | Glu | Asn | Ser | Leu | Gln | Asp | Pro | Thr |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |

<210> 101

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 101

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Glu | Ile | Val | Lys | Lys | Val | Trp | Glu | Tyr | Ile | Lys | Lys | His | Asn | Cys |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Gln | Asp | Gln | Lys |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 102

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 102

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Val | Trp | Glu | Tyr | Ile | Lys | Lys | His | Asn | Cys | Gln | Asp | Gln | Lys | Asn |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Lys | Arg | Asn | Ile |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 103

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 103

Lys Val Trp Glu Tyr Ile Lys Lys His Asn Cys Gln Asp Gln Lys  
 1 5 10 15

<210> 104  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 104  
 Ala Glu Leu Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln  
 1 5 10 15  
 Ser Asp Tyr Val  
 20

<210> 105  
 <211> 21  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 105  
 Leu Gln Ser Asp Tyr Val Val Glu Gly Asp Leu Arg Arg Arg Val Gln  
 1 5 10 15  
 Ser Asp Ile Lys Arg  
 20

<210> 106  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 106  
 Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys  
 1 5 10 15  
 Ile Ser Leu Thr  
 20

<210> 107  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 107  
 Ala Glu Leu Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln  
 1 5 10 15  
 Ser Asp Tyr Val

20

<210> 108  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 108  
 Leu Asn Ala Leu Leu Gln Ser Asp Tyr Val Val Glu Gly Asp Leu Arg  
 1 5 10 15  
 Arg Arg Val Gln  
 20

<210> 109  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 109  
 Leu Asn Ser Leu Leu Gln Ser Glu Tyr Thr Val Glu Gly Asp Leu Arg  
 1 5 10 15  
 Arg Arg Val Gln  
 20

<210> 110  
 <211> 1461  
 <212> DNA  
 <213> Chlamydia

<400> 110  
 ctatctatga agttatgaat atggatctag aaacacgaag atcttttgcg gtacagcaag 60  
 ggcactatca ggacccaaga gcttcagatt atgacctccc acgtgctagc gactatgatt 120  
 tgcctagaag cccatatacct actccacctt tgccttctag atatacagcta cagaatatgg 180  
 atgtagaagc agggttccgt gaggcagttt atgcttcttt tgtagcagga atgtacaatt 240  
 atgtagtgac acagccgcaa gagcgtattc ccaatagtca gcagggtgaa gggattctgc 300  
 gtgatatgct taccaacggg tcacagacat ttagcaacct gatgcagcgt tgggatagag 360  
 aagtcgatag ggaataaaact ggtatctacc ataggtttgt atcaaaaaac taagcccacc 420  
 aagaagaaat tctctttggt gggcttcttt ttttattcaa aaaagaaagc cctcttcaag 480  
 attatctcgt gccgctcgtg ccgaattcgg cagcagcggc acgaggagct gtaagtaagt 540  
 attgccaaga gttggaagaa aaaatattag atttgtgtaa gcgtcatgcc gcaacaattt 600  
 gctccattga ggaggatgct aaacaagaaa ttcgtcatca gacagaaagg tttaaacagc 660  
 gggttgaaca aaatcagaac acttgcagtc aattaacagc agagttgtgt aaattgagat 720  
 ctgagaataa ggcattatcg gagcggctgc aggtgcaggc atcccgtcgt aaaaaataat 780  
 taaagactcc tcagatatcg catctgagag ttaggggttc cttttgctta cggcgcttta 840  
 gttctgcatg ttgcggattt atagtattt gcgagtaaag cgccgttctg atacagtttt 900  
 tccgctttta aaataaaaaa gtggaaaaat gactactact attagcggag acgcttcttc 960  
 tttaccggtt ccaacagctt cctgcgtaga gacaaaatct acttcgtctt caacaaaagg 1020  
 gaatacttgt tccaaaattt tggatatagc tttagctatc gtaggcgctt tagttgttgt 1080  
 cgctggggta ttagcttttg ttttgtgcgc tagcaatgtc atatttactg taataggtat 1140  
 tcctgcatta attattggat ctgcttgtgt ggggtcggga atatctcgtc ttatgtatcg 1200  
 atcctcttat gctagcttag aagcaaaaaa tgttttggct gagcaacggt tgcgtaattc 1260

```

ttcagaagag aaggacgctt tggcctccgt ctctttcatt aataagatgt ttctgcgagg 1320
tcttacggac gatctccaag ctttggaagc taaggtaatg gaatttgaga ttgattgttt 1380
ggacagatta gagaaaaatg agcaagcttt attgtccgat gtgcgcttag ttttatctag 1440
ctacacaaga tggttggata g

```

<210> 111  
 <211> 267  
 <212> DNA  
 <213> Chlamydia

```

<400> 111
gtcctcttct tattatagca gaagacattg aaggcgaagc tttagctact ttggtcgtga 60
acagaattcg tggaggattc cgggtttgcg cagttaaagc tccaggcttt ggagatagaa 120
gaaaagctat gttggaagac atcgctatct taactggcgg tcaactcatt agcgaagagt 180
tgggcatgaa attagaaaac gctaacttag ctatgttagg taaagctaaa aaagttatcg 240
tttctaaaga agacacgacc atcgtcg

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<210> 112  
 <211> 698  
 <212> DNA  
 <213> Chlamydia

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<400> 112
tgataagcaa gcaaccgctc aactagcagc tctaactatt aaaaaaatcc tctgttttga 60
tgaaaattcc tacgagaagg agctggcatg cttagaaaag aaacgcagta gcgtacaaaa 120
agatctgagc caactgaaaa aatacacagt tctctacatc aagaagctgc tcgaaaccta 180
cagacaactc gggcatcgaa agacaaaaat tgcaaaatct gatgacctac ctaccgagag 240
agtctccgct cataagaaaag caaaagaact cgctgcgctc gatcaagaag agaacttcta 300
aaacgtgact cggcccttga gatccttaaa ctctcgggcc aaaaagacta cagtcttctc 360
gagaagaaaa acggtgttag aaaatacgcg cgctaagact ttctctaaca atgactcaaa 420
aagctgtaaa cgtatacggt taccgctctt ccataatttc taggctgact ttcacattat 480
ctcgacttgc tacggaaacc aataaagtag ggatagcctt aatagtgcgt ccttctttac 540
cgataatttt accgatattc cccttagcaa cagtcaattc gtagataatc gtattgggtc 600
cctgcacctc tttcagatgc acttctctcg gcttatcaac aagatttttt acaatgtacg 660
ctaaaaactc tttcatgcga agcaaatcct acacaagc

```

<210> 113  
 <211> 1142  
 <212> DNA  
 <213> Chlamydia

```

<400> 113
ctcttcaaag attgtgagtt tatgtgaagg cgctgtcgct gatgcaagaa tgtgcaaagc 60
agagttgata aaaaaagaag cggatgctta tttgttttgt gagaaaagcg ggatatatct 120
aacgaaaaaa gaaggtatct tgattccttc tgcagggatt gatgaatcga ataccgacca 180
gccttttgtt ttatatccta aagatatctt gggatcggtg aatcgcatcg gagaatggtt 240
aagaaattat tttcgagtga aagagctagg cgtaatcatt acagatagcc atactactcc 300
aatgcggcgt ggagtactgg gtatcgggct gtgttggtat ggattttctc cattacacaa 360
ctatatagga tcgctagatt gtttcggctc tcccttacag atgacgcaaa gtaatcttgt 420
agatgcctta gcagttgctg ctgttggttg tatgggagag gggaaatgagc aaacaccggt 480
agcgggtgata gagcaggcac ctaatatggt ctaccattca tctctactt ctcgagaaga 540
gtattgttct ttgcgcatag atgaaacaga ggacttatac ggaccttttt tgcaagcggt 600
tacgtggagt caagaaaaga aatgatggag gtgtttatga attttttaga tcagttagat 660
ttaattattc aaaataagca tatgctagaa cacacgtttt atgtgaaatg gtcgaagggg 720
gagcttacta aagagcaatt acaggcgtat gccaaagact attatttaca tatcaaagcc 780
tttcttaaat atttatctgc gattcatagt cgttgcgatg atttagaggc gcgtaagtta 840
ttgttagata acttgatgga tgaagagaac ggttacccta atcatattga tttgtggaag 900

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```

cagtttgtgt ttgctctagg agttactcca gaagagtttag aggctcatga gcctagtga 960
gcagcaaaag cgaaagtagc tactttcatg cggtgggtgta caggagattc tttagctgca 1020
ggagtggctg ctttgtattc ttatgagagt caaattccac gtatcgctag agagaaaatt 1080
cgtggattga ctgagtactt tggattttcc aatcctgaag actatgcata tttcacagaa 1140
ca 1142

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<210> 114  
 <211> 976  
 <212> DNA  
 <213> Chlamydia

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<400> 114
agggtgatgg ggcgcctgtc caagatgtgc tcgctactct atatggaagc aatcacaaaag 60
ggactgcagc tgaagagtcg gctgctttta gaacactatt ttctcgcatg gcctcttttag 120
ggcacaaagt accttctggg cgcactactt taaagattcg tcgtcctttt ggtactacga 180
gagaagttcg tgtgaaatgg cgttatgttc ctgaagggtg aggagatttg gctaccatag 240
ctccttctat cagggctcca cagttacaga aatcgatgag aagctttttc cctaagaaaag 300
atgatgcgtt tcatcggtct agttcgctat tctactctcc aatgggtccg catttttggg 360
cagagcttcg caatcattat gcaacgagtg gtttgaaaag cgggtacaat attgggagta 420
ccgatgggtt tctccctgtc attgggcctg ttatatggga gtcggagggt cttttccgcg 480
cttatatttc ttcggtgact gatggggatg gtaagagcca taaagtagga tttctaagaa 540
ttcctacata tagttggcag gacatggaag attttgatcc ttcaggaccg cctccttggg 600
aagaatttgc taagattatt caagtatttt ctctcaatac agaagctttg attatcgacc 660
aaacgaacaa cccaggtggg agtgtccttt atctttatgc actgctttcc atgttgacag 720
accgtccttt agaacttcct aaacatagaa tgattctgac tcaggatgaa gtgggtgatg 780
ctttagattg gttaaccttg ttggaaaacg tagacacaaa cgtggagtct cgccttgctc 840
tgggagacaa catggaagga tatactgtgg atctacaggt tgccgagtat taaaaagct 900
ttggacgtca agtattgaat tgttggagta aaggggatat cgagttatca acacctattc 960
ctctttttgg ttttga 976

```

<210> 115  
 <211> 995  
 <212> DNA  
 <213> Chlamydia

```

<400> 115
ttatcctaga aatttgggtg tcaatatgag cgaaaaaaga aagtctaaca aaattattgg 60
tatcgacctg gggacgacca actcttgctg ctctgttatg gaaggtggcc aacctaaagt 120
tattgctctt tctgaaggaa ctcgctactac tccttctatc gttgctttta aaggtggcga 180
aactcttgtt ggaattcctg caaaacgtca ggcagtaacc aatcctgaaa aaacattggc 240
ttctactaag cgattcatcg gtagaaaatt ctctgaagtc gaatctgaaa ttaaaacagt 300
cccctacaaa gttgctccta actcgaaaag agatgcggtc tttgatgtgg aacaaaaact 360
gtacactcca gaagaaatcg gcgctcagat cctcatgaag atgaaggaaa ctgctgaggc 420
ttatctcgga gaaacagtaa cggaagcagt cattaccgta ccagcttact ttaacgattc 480
tcaaagagct tctacaaaag atgctggacg tatcgcagga ttagatgta aacgcattat 540
tctgaacca acagcggccg ctcttgctta tggattgat aaggaaggag ataaaaaat 600
cgccgtcttc gacttaggag gaggaacttt cgatatttct atcttgaaa tcggtgacgg 660
agtttttgaa gttctctcaa ccaacgggga tactcacttg ggaggagacg acttcgacgg 720
agtcatcatc aactggatgc ttgatgaatt caaaaaacaa gaaggcattg atctaagcaa 780
agataacatg gctttgcaaa gattgaaaga tgctgctgaa aaagcaaaaa tagaattgtc 840
tgggtgatcg tctactgaaa tcaatcagcc attcatcact atcgacgcta atggacctaa 900
acatttggct ttaactctaa ctgcgcgtca attcgaacac ctacttctct ctctcattga 960
gcgaaccaa caaccttgtg ctccaggcttt aaaag 995

```

<210> 116  
 <211> 437  
 <212> DNA

## &lt;213&gt; Chlamydia

## &lt;400&gt; 116

```

gtcacagcta aaggcgggtg gctttatact gataagaatc tttcgattac taacatcaca 60
ggaattatcg aaattgcaaa taacaaagcg acagatgttg gaggtggtgc ttacgtaaaa 120
ggaaccctta cttgtaaaaa ctctcaccgt ctacaatttt tgaaaaactc ttccgataaa 180
caaggtggag gaatctacgg agaagacaac atcacccctat ctaatttgac aggggaagact 240
ctattccaag agaatactgc caaaaaagag ggcggtggac tcttcataaa aggtacagat 300
aaagctctta caatgacagg actggatagt ttctgtttta ttaataacac atcagaaaaa 360
catggtggtg gagcctttgt taccaaagaa atctctcaga cttacacctc tgatgtggaa 420
acaattccag gaatcac
437

```

## &lt;210&gt; 117

## &lt;211&gt; 446

## &lt;212&gt; DNA

## &lt;213&gt; Chlamydia

## &lt;400&gt; 117

```

aagtttacct agaccaaact gaagatgacg aaggaaaagt tgttttatcc agagaaaaag 60
caacaagaca acgacaatgg gaatacattc ttgctcactg cgaggaaggt tctattgtta 120
agggacaaat taccgaaaaa gttaagggtg gtttgatcgt agatatttgt atggaagcct 180
tccttcagg atcccaaata gacaataaga agatcaagaa cttagatgat tacgtaggca 240
aggtttgtga gttcaaaatt ctcaaatca acgtggatcg tcggaacggt gttgtatcta 300
gaagagaact tctcgaagct gaacgcattt ctaagaaagc agagttgatc gagcaaatca 360
ctatcggtga acgtcgcaaa ggtatcggtt agaatatcac agatttcgga gtattcttgg 420
atcttgatgg cattgacggc ctactc
446

```

## &lt;210&gt; 118

## &lt;211&gt; 951

## &lt;212&gt; DNA

## &lt;213&gt; Chlamydia

## &lt;400&gt; 118

```

agtattgcga aatattactg tgagaagcaa tgctgagagc ggttctagta aaagtgaggg 60
gagagctgtc agaagggatc gctcaggaag cgagacaacg tgtggctgat ttattaggaa 120
gattccctct ttatcctgaa atcgatctgg aaacgctagt ttagtgggag actctatgcc 180
tgaaggggaa atgatgcata agttgcaaga tgatcatagat agaaagtgtg tggattctcg 240
tcgtattttc ttctccgaac ctgtaacgga gaaaagtgtc gcagaagcca tcaaaaagct 300
ttggtatttt gaactcaca atcctgggca gccaatgtga tttgtcatta atagccctgg 360
aggtctgtgt gatgctgggt ttgctgtttg ggaccaaatt aaaatgatct cttctccttt 420
gactacagtt gttacaggtt tagcagcatc tatgggatct gtattgagtt tgtgtgctgt 480
tccaggaaga cgttttgcta cgcctcatgc gcgcattatg attcaccagc cttctatttg 540
aggaaccatt actggtcaag ccacggactt ggatattcat gctcgtgaaa ttttaaaac 600
aaaagcacgc attattgatg tgtatgtcga ggcaactgga caatctocag aggtgataga 660
gaaagctatc gatcgagata tgtggatgag tgcaaatgaa gcaatggagt ttggactgtt 720
agatgggatt ctcttctctt ttaacgactt gtagatatct tttatattct ggagcaggaa 780
acagtttcat tttgggagaa tcgatgcctt ctcttgagga tgttctgttt ttatgccagg 840
aagagatggt tgatgggttt ttatgtgtag agtcttctga aatagcagat gctaaactca 900
ctgtttttta tagtgatgga tctatcgcgt ctatgtgcgg gaatgggttg c 951

```

## &lt;210&gt; 119

## &lt;211&gt; 953

## &lt;212&gt; DNA

## &lt;213&gt; Chlamydia

## &lt;400&gt; 119

```

atatcaaagt tgggcaaagt acagagccgc tcaaggacca gcaaataatc cttgggacaa 60

```



```

catcaacacc tgtcgcagcc aaaatgacag cttctgatgg aatatcttta acagtctcca 120
ataatccatc aaccaatgct tctattacaa ttgggttgga tgcggaaaaa gcttaccagc 180
ttattctaga aaagttggga gatcaaattc ttgggtggaat tgctgatact attggtgata 240
gtacagtcca agatatttta gacaaaatca caacagaccc ttctctaggt ttgttgaaag 300
cttttaacaa ctttccaatc actaataaaa ttcaatgcaa cgggttattc actcccagga 360
acattgaaac tttattagga ggaactgaaa taggaaaatt cacagtcaca cccaaaagct 420
ctgggagcat gttcttagtc tcagcagata ttattgcatc aagaatggaa ggcggcggtg 480
ttctagcttt ggtacgagaa ggtgattcta agccctacgc gattagttat ggatactcat 540
caggcgttcc taatttatgt agtctaagaa ccagaattat taatacagga ttgactccga 600
caacgtattc attacgtgta ggcgggttag aaagcgggtg ggtatgggtt aatgcccttt 660
ctaattggcaa tgatatttta ggaataacaa atacttctaa tgtatctttt ttggaggtaa 720
tacctcaaac aaacgcttaa acaattttta ttggattttt cttataggtt ttatatttag 780
agaaaaaagt tcgaattacg ggggttggtt tgcaaaataa aagcaaagtg agggacgatt 840
ttattaaaat tgttaaagat tcttggtatc ggtctgcgat tccgactcgt ccaacatcaa 900
tacaacctat taatttcccc tcgtcaaaaa taaggttatc aagtggagaa tca 953

```

<210> 120  
 <211> 897  
 <212> DNA  
 <213> Chlamydia

```

<400> 120
atggcttcta tatgcggacg tttagggctc ggtacagggg atgctctaaa agcttttttt 60
acacagccca gcaataaaat ggcaagggtg gtaaataaga cgaagggaat ggataagact 120
gttaagggtc ccaagtctgc tgccgaattg accgcaaata ttttggaca agctggaggc 180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
actgttctcg ctttagggaa tgcctttaac ggagcggtgc caggaacagt tcaaagtgcg 300
caaagcttct tctcttacat gaaagctgct agtcagaaac cgcaagaagg ggatgagggg 360
ctcgtagcag atctttgtgt gtctcataag cgcanaagcg ctgcggctgt ctgtagcttc 420
atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtaac 480
aaaatgctgg cgcaaccgtt tctttcttcc caaattaaag caaatatggg atcttctggt 540
agctatatta tggcggctaa ccatgcagcg tttgtggtgg gttctggact cgctatcagt 600
gcggaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgtcactc 660
gaattgtcgg gagaggaaaa tgcttgcgag aggagagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
gacgttttca aattggtgcc gttgcctatt acaatgggta ttcgtgcaat tgtggctgcg 840
ggatgtacgt tcacttctgc agttattgga ttgtggactt tctgcgccag agcataa 897

```

<210> 121  
 <211> 298  
 <212> PRT  
 <213> Chlamydia

```

<400> 121
Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
1          5          10          15
Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
20        25        30
Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
35        40        45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
50        55        60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
65        70        75        80
Thr Val Leu Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
85        90        95

```

Val Gln Ser Ala Gln Ser Phe Phe Ser Tyr Met Lys Ala Ala Ser Gln  
                   100                  105                  110  
 Lys Pro Gln Glu Gly Asp Glu Gly Leu Val Ala Asp Leu Cys Val Ser  
           115                  120                  125  
 His Lys Arg Arg Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile  
       130                  135                  140  
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn  
   145                  150                  155                  160  
 Lys Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Ile Lys Ala Asn Met  
                   165                  170                  175  
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Phe Val  
           180                  185                  190  
 Val Gly Ser Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala  
       195                  200                  205  
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Ser Leu Glu Leu Ser Gly  
       210                  215                  220  
 Glu Glu Asn Ala Cys Glu Arg Arg Val Ala Gly Glu Lys Ala Lys Thr  
   225                  230                  235                  240  
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu  
                   245                  250                  255  
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met  
           260                  265                  270  
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Val  
       275                  280                  285  
 Ile Gly Leu Trp Thr Phe Cys Ala Arg Ala  
       290                  295

<210> 122  
 <211> 897  
 <212> DNA  
 <213> Chlamydia

<400> 122  
 atggcttcta tatgcggacg tttaggggtct ggtacagggga atgctctaaa agcttttttt 60  
 acacagccca gcaataaaat ggcaagggtta gtaaataaga cgaaggggaat ggataagact 120  
 gttaagggtcg ccaagtctgc tgccgaattg accgcaaata ttttggaaaca agctggaggc 180  
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatacgaga 240  
 actgttgtcg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300  
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360  
 ctacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtggcttc 420  
 atcggaggaa ttacctacct cgcgacattc ggagttatcc gtccgattct gtttgtcaac 480  
 aaaatgctgg tgaacccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540  
 agctatatta tggcggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600  
 gcggaaagag cagattgcga agcccgctgc gctcgtattg cgagagaaga gtcgttactc 660  
 gaagtgtcgg gagaggaaaa tgcttgcgag aagagagtcg ctggagagaa agccaagacg 720  
 ttacgcgcga tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780  
 gacgttttca aattgggtgc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840  
 ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 123  
 <211> 298  
 <212> PRT  
 <213> Chlamydia

<400> 123  
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu  
   1                  5                  10                  15

Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn  
                   20                  25                  30  
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala  
                   35                  40                  45  
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser  
                   50                  55                  60  
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg  
                   65                  70                  75                  80  
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr  
                   85                  90                  95  
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln  
                   100                  105                  110  
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser  
                   115                  120                  125  
 His Lys Arg Arg Ala Ala Ala Ala Val Cys Gly Phe Ile Gly Gly Ile  
                   130                  135                  140  
 Thr Tyr Leu Ala Thr Phe Gly Val Ile Arg Pro Ile Leu Phe Val Asn  
                   145                  150                  155                  160  
 Lys Met Leu Val Asn Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met  
                   165                  170                  175  
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val  
                   180                  185                  190  
 Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala  
                   195                  200                  205  
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Ser Gly  
                   210                  215                  220  
 Glu Glu Asn Ala Cys Glu Lys Arg Val Ala Gly Glu Lys Ala Lys Thr  
                   225                  230                  235                  240  
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu  
                   245                  250                  255  
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met  
                   260                  265                  270  
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile  
                   275                  280                  285  
 Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala  
                   290                  295

&lt;210&gt; 124

&lt;211&gt; 897

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 124

|            |             |             |             |            |            |     |
|------------|-------------|-------------|-------------|------------|------------|-----|
| atggcttcta | tatgcggacg  | tttaggggtct | ggtacagggga | atgctctaaa | agcttttttt | 60  |
| acacagccca | acaataaaat  | ggcaagggtg  | gtaaataaga  | cgaagggaat | ggataagact | 120 |
| attaaggttg | ccaagtctgc  | tgccgaattg  | accgcaaata  | ttttggaaca | agctggaggc | 180 |
| gcgggtctct | ccgcacacat  | tacagcttcc  | caagtgtcca  | aaggattagg | ggatgcgaga | 240 |
| actgttgtcg | ctttagggaa  | tgcttttaac  | ggagcgttgc  | caggaacagt | tcaaagtgcg | 300 |
| caaagcttct | tctctcacat  | gaaagctgct  | agtcagaaaa  | cgcaagaagg | ggatgagggg | 360 |
| ctcacagcag | atcttttgtg  | gtctcataag  | cgcagagcgg  | ctgcggctgt | ctgtagcatc | 420 |
| atcggaggaa | ttacctacct  | cgcgacattc  | ggagctatcc  | gtccgattct | gtttgtcaac | 480 |
| aaaatgctgg | caaaaccgtt  | tctttcttcc  | caaactaaag  | caaatatggg | atcttctggt | 540 |
| agctatatta | tggcggctaa  | ccatgcagcg  | tctgtggtgg  | gtgctggact | cgctatcagt | 600 |
| gcggaaagag | cagattgcga  | agcccgcgtg  | gctcgtattg  | cgagagaaga | gtcgttactc | 660 |
| gaagtgccgg | gagaggaaaa  | tgcttgcgag  | aagaaagtcg  | ctggagagaa | agccaagacg | 720 |
| ttcacgcgca | tcaagtatgc  | actcctcact  | atgctcgaga  | agtttttgga | atgcggtgcc | 780 |
| gacgttttca | aattgggtgcc | gctgcctatt  | acaatgggta  | ttcgtgcgat | tgtggctgct | 840 |

ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa

897

<210> 125

<211> 298

<212> PRT

<213> Chlamydia

<400> 125

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Ile | Cys | Gly | Arg | Leu | Gly | Ser | Gly | Thr | Gly | Asn | Ala | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Lys | Ala | Phe | Phe | Thr | Gln | Pro | Asn | Asn | Lys | Met | Ala | Arg | Val | Val | Asn |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Lys | Thr | Lys | Gly | Met | Asp | Lys | Thr | Ile | Lys | Val | Ala | Lys | Ser | Ala | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Leu | Thr | Ala | Asn | Ile | Leu | Glu | Gln | Ala | Gly | Gly | Ala | Gly | Ser | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ala | His | Ile | Thr | Ala | Ser | Gln | Val | Ser | Lys | Gly | Leu | Gly | Asp | Ala | Arg |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Thr | Val | Val | Ala | Leu | Gly | Asn | Ala | Phe | Asn | Gly | Ala | Leu | Pro | Gly | Thr |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Val | Gln | Ser | Ala | Gln | Ser | Phe | Phe | Ser | His | Met | Lys | Ala | Ala | Ser | Gln |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Thr | Gln | Glu | Gly | Asp | Glu | Gly | Leu | Thr | Ala | Asp | Leu | Cys | Val | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| His | Lys | Arg | Arg | Ala | Ala | Ala | Ala | Val | Cys | Ser | Ile | Ile | Gly | Gly | Ile |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Thr | Tyr | Leu | Ala | Thr | Phe | Gly | Ala | Ile | Arg | Pro | Ile | Leu | Phe | Val | Asn |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Lys | Met | Leu | Ala | Lys | Pro | Phe | Leu | Ser | Ser | Gln | Thr | Lys | Ala | Asn | Met |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Gly | Ser | Ser | Val | Ser | Tyr | Ile | Met | Ala | Ala | Asn | His | Ala | Ala | Ser | Val |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Gly | Ala | Gly | Leu | Ala | Ile | Ser | Ala | Glu | Arg | Ala | Asp | Cys | Glu | Ala |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Arg | Cys | Ala | Arg | Ile | Ala | Arg | Glu | Glu | Ser | Leu | Leu | Glu | Val | Pro | Gly |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Glu | Glu | Asn | Ala | Cys | Glu | Lys | Lys | Val | Ala | Gly | Glu | Lys | Ala | Lys | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Phe | Thr | Arg | Ile | Lys | Tyr | Ala | Leu | Leu | Thr | Met | Leu | Glu | Lys | Phe | Leu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Glu | Cys | Val | Ala | Asp | Val | Phe | Lys | Leu | Val | Pro | Leu | Pro | Ile | Thr | Met |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Gly | Ile | Arg | Ala | Ile | Val | Ala | Ala | Gly | Cys | Thr | Phe | Thr | Ser | Ala | Ile |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ile | Gly | Leu | Cys | Thr | Phe | Cys | Ala | Arg | Ala |     |     |     |     |     |     |
|     | 290 |     |     |     |     | 295 |     |     |     |     |     |     |     |     |     |

<210> 126

<211> 897

<212> DNA

<213> Chlamydia

<400> 126

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| atggcttcta | tatgcggacg | tttagggctc | ggtacagggg | atgctctaaa | agcttttttt | 60  |
| acacagccca | acaataaaat | ggcaagggta | gtaaataaga | cgaagggaat | ggataagact | 120 |
| attaaggttg | ccaagtctgc | tgccgaattg | accgcaaata | ttttggaaca | agctggaggc | 180 |
| gcgggctctt | ccgcacacat | tacagcttcc | caagtgtcca | aaggattagg | ggatgcgaga | 240 |

```

actgttgtcg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcatc 420
atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
aaaatgctgg caaaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
agctatatta tggcgggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
gcgaaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgttactc 660
gaagtgccgg gagaggaataa tgcttgcgag aagaaagtgc ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780
gacgttttca aattgggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

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<210> 127

<211> 298

<212> PRT

<213> Chlamydia

<400> 127

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Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1          5          10          15
Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
 20          25          30
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
 35          40          45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
 50          55          60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
 65          70          75          80
Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
 85          90          95
Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln
100          105          110
Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser
115          120          125
His Lys Arg Arg Ala Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile
130          135          140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn
145          150          155          160
Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met
165          170          175
Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val
180          185          190
Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala
195          200          205
Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly
210          215          220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
225          230          235          240
Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
245          250          255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
260          265          270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
275          280          285
Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
290          295

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<210> 128  
 <211> 897  
 <212> DNA  
 <213> Chlamydia

<400> 128  
 atggcttcta tatgtggacg tttaggggtct ggtacaggga atgctctaaa agcttttttt 60  
 acacagccca gcaataaaat ggcaagggtta gtaaataaga cgaagggaat ggataagact 120  
 gttaagggtcg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180  
 gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatacgaga 240  
 actggttgctg ctttagggaa tgctttaaac ggagcgttgc caggaacagt tcaaagtgcg 300  
 caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360  
 ctcacagcag atcttttgtg gtctcataag cgcagagcgg ctgcggtgt ctgtggcttc 420  
 atcggaggaa ttacctacct cgcgacattc ggagttatcc gtccgattct gtttgtcaac 480  
 aaaatgctgg tgaaccggtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540  
 agctatatta tggcggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600  
 gcggaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgttactc 660  
 gaagtgtcgg gagaggaaaa tgcttgcgag aagagagtcg ctggagagaa agccaagacg 720  
 ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780  
 gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840  
 ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 129  
 <211> 298  
 <212> PRT  
 <213> Chlamydia

<400> 129  
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu  
 1 5 10 15  
 Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn  
 20 25 30  
 Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala  
 35 40 45  
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser  
 50 55 60  
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg  
 65 70 75 80  
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr  
 85 90 95  
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln  
 100 105 110  
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser  
 115 120 125  
 His Lys Arg Arg Ala Ala Ala Val Cys Gly Phe Ile Gly Gly Ile  
 130 135 140  
 Thr Tyr Leu Ala Thr Phe Gly Val Ile Arg Pro Ile Leu Phe Val Asn  
 145 150 155 160  
 Lys Met Leu Val Asn Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met  
 165 170 175  
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val  
 180 185 190  
 Val Gly Ala Gly Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala  
 195 200 205  
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Ser Gly  
 210 215 220  
 Glu Glu Asn Ala Cys Glu Lys Arg Val Ala Gly Glu Lys Ala Lys Thr

```

225          230          235          240
Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu
          245          250          255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
          260          265          270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
          275          280          285
Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
          290          295

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<210> 130  
 <211> 897  
 <212> DNA  
 <213> Chlamydia

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<400> 130
atggctgcta tatgtggacg tttagggctct ggtacaggga atgctctaaa agcttttttt 60
acacagccca gcaataaaat ggcaagggtg gtaaataaga cgaagggaat ggataagact 120
gttaaggctcg ccaagtctgc tgccgaattg accgcaaata ttttggaaaca agctggaggc 180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
actgttctcg ctttagggaa tgcctttaac ggagcggtgc caggaacagt tcaaagtgcg 300
caaagcttct tctcttacat gaaagctgct agtcagaaac cgcaagaagg ggatgagggg 360
ctcgtagcag atctttgtgt gtctcataag cgcagagcgg ctgcggtgt ctgtagcttc 420
atcgaggagaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
aaaatgctgg cgcaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
agctatatta tggcggctaa ccatgcagcg tttgtggtgg gttctggact cgctatcagt 600
gcggaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgtcactc 660
gaattgtcgg gagaggaaaa tgcttgcgag aggggagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttgcc 780
gacgttttca aattggtgcc gttgcctatt acaatgggta ttcgtgcaat tgtggctgcg 840
ggatgtacgt tcacttctgc agttattgga ttgtggactt tctgcaacag agtataa 897

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<210> 131  
 <211> 298  
 <212> PRT  
 <213> Chlamydia

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<400> 131
Met Ala Ala Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1          5          10          15
Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn
          20          25          30
Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala
          35          40          45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser
          50          55          60
Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg
65          70          75          80
Thr Val Leu Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr
          85          90          95
Val Gln Ser Ala Gln Ser Phe Phe Ser Tyr Met Lys Ala Ala Ser Gln
          100          105          110
Lys Pro Gln Glu Gly Asp Glu Gly Leu Val Ala Asp Leu Cys Val Ser
          115          120          125
His Lys Arg Arg Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile
          130          135          140
Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn

```

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Lys | Met | Leu | Ala | Gln | Pro | Phe | Leu | Ser | Ser | Gln | Thr | Lys | Ala | Asn | Met |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Gly | Ser | Ser | Val | Ser | Tyr | Ile | Met | Ala | Ala | Asn | His | Ala | Ala | Phe | Val |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Gly | Ser | Gly | Leu | Ala | Ile | Ser | Ala | Glu | Arg | Ala | Asp | Cys | Glu | Ala |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Arg | Cys | Ala | Arg | Ile | Ala | Arg | Glu | Glu | Ser | Ser | Leu | Glu | Leu | Ser | Gly |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Glu | Glu | Asn | Ala | Cys | Glu | Arg | Gly | Val | Ala | Gly | Glu | Lys | Ala | Lys | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Phe | Thr | Arg | Ile | Lys | Tyr | Ala | Leu | Leu | Thr | Met | Leu | Glu | Lys | Phe | Leu |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Glu | Cys | Val | Ala | Asp | Val | Phe | Lys | Leu | Val | Pro | Leu | Pro | Ile | Thr | Met |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |     |
| Gly | Ile | Arg | Ala | Ile | Val | Ala | Ala | Gly | Cys | Thr | Phe | Thr | Ser | Ala | Val |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Ile | Gly | Leu | Trp | Thr | Phe | Cys | Asn | Arg | Val |     |     |     |     |     |     |
| 290 |     |     |     |     |     | 295 |     |     |     |     |     |     |     |     |     |

<210> 132  
 <211> 897  
 <212> DNA  
 <213> Chlamydia

|   |     |
|---|-----|
| <400> 132   |     |
| atggctgcta tatgcggacg tttaggggtct ggtacagggga atgctctaaa agcttttttt | 60  |
| acacagccca gcaataaaat ggcaagggta gtaaataaga cgaagggaat ggataagact   | 120 |
| gttaaggtcg ccaagtctgc tgccgaattg accgcaaata ttttgaaca agctggaggc    | 180 |
| gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga   | 240 |
| actgttctcg ctttagggaa tgctttaaac ggagcgttgc caggaacagt tcaaagtgcg   | 300 |
| caaagcttct tctcttacat gaaagctgct agtcagaaac cgcaagaagg ggatgagggg   | 360 |
| ctcgtagcag atctttgtgt gtctcataag cgcagagcgg ctgcggctgt ctgtagcttc   | 420 |
| atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac   | 480 |
| aaaatgctgg cgcaaccgtt tctttcttcc caaactaaag caaatatggg atcttctggt   | 540 |
| agctatatta tggcgggctaa ccatgcagcg tttgtgggtg gttctggact cgctatcagt  | 600 |
| gcggaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgtcactc    | 660 |
| gaattgtcgg gagaggaana tgcttgtgag aggagagtcg ctggagagaa agccaagacg   | 720 |
| ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttggg atgcgttggc   | 780 |
| gacgttttca aattggtgcc gttgcctatt acaatgggta ttcgtgcaat tgtggctgcg   | 840 |
| ggatgtacgt tcacttctgc agttattgga ttgtggactt tctgcaacag agtataa      | 897 |

<210> 133  
 <211> 298  
 <212> PRT  
 <213> Chlamydia

|   |          |
|---|----------|
| <400> 133   |          |
| Met Ala Ala Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu |          |
| 1   | 5 10 15  |
| Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn |          |
|   | 20 25 30 |
| Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala |          |
|   | 35 40 45 |
| Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser |          |
| 50  | 55 60    |
| Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg |          |



|                 |   |     |     |
|-----------------|---|-----|-----|
| 65              | 70  | 75  | 80  |
| Thr Val Leu Ala | Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr |     |     |
|                 | 85  | 90  | 95  |
| Val Gln Ser Ala | Gln Ser Phe Phe Ser Tyr Met Lys Ala Ala Ser Gln |     |     |
|                 | 100   | 105 | 110 |
| Lys Pro Gln Glu | Gly Asp Glu Gly Leu Val Ala Asp Leu Cys Val Ser |     |     |
|                 | 115   | 120 | 125 |
| His Lys Arg Arg | Ala Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile |     |     |
|                 | 130   | 135 | 140 |
| Thr Tyr Leu Ala | Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn |     |     |
|                 | 145   | 150 | 155 |
| Lys Met Leu Ala | Gln Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met |     |     |
|                 | 165   | 170 | 175 |
| Gly Ser Ser Val | Ser Tyr Ile Met Ala Ala Asn His Ala Ala Phe Val |     |     |
|                 | 180   | 185 | 190 |
| Val Gly Ser Gly | Leu Ala Ile Ser Ala Glu Arg Ala Asp Cys Glu Ala |     |     |
|                 | 195   | 200 | 205 |
| Arg Cys Ala Arg | Ile Ala Arg Glu Glu Ser Ser Leu Glu Leu Ser Gly |     |     |
|                 | 210   | 215 | 220 |
| Glu Glu Asn Ala | Cys Glu Arg Arg Val Ala Gly Glu Lys Ala Lys Thr |     |     |
|                 | 225   | 230 | 235 |
| Phe Thr Arg Ile | Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu |     |     |
|                 | 245   | 250 | 255 |
| Glu Cys Val Ala | Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met |     |     |
|                 | 260   | 265 | 270 |
| Gly Ile Arg Ala | Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Val |     |     |
|                 | 275   | 280 | 285 |
| Ile Gly Leu Trp | Thr Phe Cys Asn Arg Val                         |     |     |
|                 | 290   | 295 |     |

<210> 134  
 <211> 897  
 <212> DNA  
 <213> Chlamydia

|             |             |             |             |            |             |
|-------------|-------------|-------------|-------------|------------|-------------|
| <400> 134   |             |             |             |            |             |
| atggcttcta  | tatgcgagcg  | tttaggggtct | ggtacagggga | atgctctaaa | agctttttttt |
| acacagccca  | acaataaaat  | ggcaagggtta | gtaaataaga  | cgaagggaat | ggataagact  |
| attaagggtt  | ccaagtctgc  | tgccgaattg  | accgcaaata  | ttttggaaca | agctggagggc |
| gcgggctctt  | ccgcacacat  | tacagcttcc  | caagtgtcca  | aaggattagg | ggatgcgaga  |
| actgttgctg  | ctttagggaa  | tgcttttaac  | ggagcggttg  | caggaacagt | tcaaagtgcg  |
| caaagcttct  | tctctcacat  | gaaagctgct  | agtcagaaaa  | cgcaagaagg | ggatgagggg  |
| ctcacagcag  | atctttgtgt  | gtctcataag  | cgcagagcgg  | ctgaggctgt | ctgtagcatc  |
| atcggaggaa  | ttacctacct  | cgcgacattc  | ggagctatcc  | gtccgattct | gtttgtcaac  |
| aaaatgctgg  | caaaaccggt  | tctttcttcc  | caaactaaag  | caaatatggg | atcttctggt  |
| agctatatta  | tggcggtctaa | ccatgcagcg  | tctgtggtgg  | gtgctggact | cgctatcagt  |
| gcggaaaagag | cagattgcga  | agcccgtctg  | gctcgtattg  | cgagagaaga | gtcgttactc  |
| gaaatgccgg  | gagaggaaaa  | tgcttgcgag  | aagaaagtcg  | ctggagagaa | agccaagacg  |
| ttcacgcgca  | tcaagtatgc  | actcctcact  | atgctcgaga  | agtttttgga | atgcggtgcc  |
| gacgttttca  | aattgggtgcc | gctgcctatt  | acaatgggta  | ttcgtgcgat | tgtggctgct  |
| ggatgtacgt  | tcacttctgc  | aattattgga  | ttgtgcactt  | tctgcgccag | agcataa     |
|             |             |             |             |            | 897         |

<210> 135  
 <211> 298  
 <212> PRT  
 <213> Chlamydia

<400> 135

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Ile | Cys | Gly | Arg | Leu | Gly | Ser | Gly | Thr | Gly | Asn | Ala | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Lys | Ala | Phe | Phe | Thr | Gln | Pro | Asn | Asn | Lys | Met | Ala | Arg | Val | Val | Asn |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Lys | Thr | Lys | Gly | Met | Asp | Lys | Thr | Ile | Lys | Val | Ala | Lys | Ser | Ala | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Leu | Thr | Ala | Asn | Ile | Leu | Glu | Gln | Ala | Gly | Gly | Ala | Gly | Ser | Ser |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ala | His | Ile | Thr | Ala | Ser | Gln | Val | Ser | Lys | Gly | Leu | Gly | Asp | Ala | Arg |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Thr | Val | Val | Ala | Leu | Gly | Asn | Ala | Phe | Asn | Gly | Ala | Leu | Pro | Gly | Thr |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Val | Gln | Ser | Ala | Gln | Ser | Phe | Phe | Ser | His | Met | Lys | Ala | Ala | Ser | Gln |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys | Thr | Gln | Glu | Gly | Asp | Glu | Gly | Leu | Thr | Ala | Asp | Leu | Cys | Val | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| His | Lys | Arg | Arg | Ala | Ala | Ala | Ala | Val | Cys | Ser | Ile | Ile | Gly | Gly | Ile |
|     | 130 |     |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |
| Thr | Tyr | Leu | Ala | Thr | Phe | Gly | Ala | Ile | Arg | Pro | Ile | Leu | Phe | Val | Asn |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Lys | Met | Leu | Ala | Lys | Pro | Phe | Leu | Ser | Ser | Gln | Thr | Lys | Ala | Asn | Met |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Gly | Ser | Ser | Val | Ser | Tyr | Ile | Met | Ala | Ala | Asn | His | Ala | Ala | Ser | Val |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Val | Gly | Ala | Gly | Leu | Ala | Ile | Ser | Ala | Glu | Arg | Ala | Asp | Cys | Glu | Ala |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Arg | Cys | Ala | Arg | Ile | Ala | Arg | Glu | Glu | Ser | Leu | Leu | Glu | Met | Pro | Gly |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Glu | Glu | Asn | Ala | Cys | Glu | Lys | Lys | Val | Ala | Gly | Glu | Lys | Ala | Lys | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Phe | Thr | Arg | Ile | Lys | Tyr | Ala | Leu | Leu | Thr | Met | Leu | Glu | Lys | Phe | Leu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Glu | Cys | Val | Ala | Asp | Val | Phe | Lys | Leu | Val | Pro | Leu | Pro | Ile | Thr | Met |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Gly | Ile | Arg | Ala | Ile | Val | Ala | Ala | Gly | Cys | Thr | Phe | Thr | Ser | Ala | Ile |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |
| Ile | Gly | Leu | Cys | Thr | Phe | Cys | Ala | Arg | Ala |     |     |     |     |     |     |
|     | 290 |     |     |     |     | 295 |     |     |     |     |     |     |     |     |     |

<210> 136

<211> 882

<212> DNA

<213> Chlamydia

<400> 136

|            |            |            |             |            |             |     |
|------------|------------|------------|-------------|------------|-------------|-----|
| atggcttctg | tatgtgggcg | attaagtgc  | ggggtgggga  | acagatttaa | cgcatttttc  | 60  |
| acgcgtccc  | gtaacaagct | atcacggtt  | gtaaatagcg  | caaaaggatt | agacagatca  | 120 |
| ataaagggtg | ggaagtctgc | tgctgaatta | acggcgagta  | ttttagagca | aactgggggg  | 180 |
| gcagggactg | atgcacatgt | tacggcggcc | aagggtgtcta | aagcacttgg | ggacgcgcga  | 240 |
| acagtaatgg | ctctagggaa | tgtcttcaat | gggtctgtgc  | cagcaaccat | tcaaagtgcg  | 300 |
| cgaagctgtc | tcgcccattt | acgagcggcc | ggcaaagaag  | aagaaacatg | ctccaaggtg  | 360 |
| aaagatctct | gtgtttctca | tagacgaaga | gctgcggctg  | aggcttgtaa | tgttattgga  | 420 |
| ggagcaactt | atattacaac | tttcggagcg | attcgtccga  | cattactcgt | taacaagctt  | 480 |
| cttgccaaac | cattcctttc | ctcccaagcc | aaagaagggt  | tgggagcttc | tggttggttat | 540 |
| atcatggcag | cgaaccatgc | ggcatctgtg | cttgggtctg  | ctttaagtat | tagcgcagaa  | 600 |
| agagcagact | gtgaagagcg | gtgtgatcgc | attcgaatga  | gtgaggatgg | tgaaatttgc  | 660 |

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gaaggcaata aattaacagc tatttcggaa gagaaggcta gatcatggac tctcattaag 720
tacagattcc ttactatgat agaaaaacta tttgagatgg tggcggatat cttcaagtta 780
attcctttgc caatttcgca tggaattcgt gctattgttg ctgcgggatg tacgttgact 840
tctgcagtta ttggcttagg tacttttttg tctagagcat aa 882

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<210> 137  
 <211> 293  
 <212> PRT  
 <213> Chlamydia

<400> 137

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Val | Cys | Gly | Arg | Leu | Ser | Ala | Gly | Val | Gly | Asn | Arg | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Asn | Ala | Phe | Phe | Thr | Arg | Pro | Gly | Asn | Lys | Leu | Ser | Arg | Phe | Val | Asn |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Ala | Lys | Gly | Leu | Asp | Arg | Ser | Ile | Lys | Val | Gly | Lys | Ser | Ala | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Leu | Thr | Ala | Ser | Ile | Leu | Glu | Gln | Thr | Gly | Gly | Ala | Gly | Thr | Asp |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ala | His | Val | Thr | Ala | Ala | Lys | Val | Ser | Lys | Ala | Leu | Gly | Asp | Ala | Arg |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Thr | Val | Met | Ala | Leu | Gly | Asn | Val | Phe | Asn | Gly | Ser | Val | Pro | Ala | Thr |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Ile | Gln | Ser | Ala | Arg | Ser | Cys | Leu | Ala | His | Leu | Arg | Ala | Ala | Gly | Lys |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Glu | Glu | Glu | Thr | Cys | Ser | Lys | Val | Lys | Asp | Leu | Cys | Val | Ser | His | Arg |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Arg | Arg | Ala | Ala | Ala | Glu | Ala | Cys | Asn | Val | Ile | Gly | Gly | Ala | Thr | Tyr |
|     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |     |
| Ile | Thr | Thr | Phe | Gly | Ala | Ile | Arg | Pro | Thr | Leu | Leu | Val | Asn | Lys | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Leu | Ala | Lys | Pro | Phe | Leu | Ser | Ser | Gln | Ala | Lys | Glu | Gly | Leu | Gly | Ala |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ser | Val | Gly | Tyr | Ile | Met | Ala | Ala | Asn | His | Ala | Ala | Ser | Val | Leu | Gly |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ser | Ala | Leu | Ser | Ile | Ser | Ala | Glu | Arg | Ala | Asp | Cys | Glu | Glu | Arg | Cys |
|     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Asp | Arg | Ile | Arg | Cys | Ser | Glu | Asp | Gly | Glu | Ile | Cys | Glu | Gly | Asn | Lys |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Leu | Thr | Ala | Ile | Ser | Glu | Glu | Lys | Ala | Arg | Ser | Trp | Thr | Leu | Ile | Lys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Tyr | Arg | Phe | Leu | Thr | Met | Ile | Glu | Lys | Leu | Phe | Glu | Met | Val | Ala | Asp |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Ile | Phe | Lys | Leu | Ile | Pro | Leu | Pro | Ile | Ser | His | Gly | Ile | Arg | Ala | Ile |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val | Ala | Ala | Gly | Cys | Thr | Leu | Thr | Ser | Ala | Val | Ile | Gly | Leu | Gly | Thr |
|     |     | 275 |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Phe | Trp | Ser | Arg | Ala |     |     |     |     |     |     |     |     |     |     |     |
| 290 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 138  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 138  
 Asp Leu Cys Val Ser His Lys Arg Arg Ala Ala Ala Val Cys Ser  
 1 5 10 15

<210> 139  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 139  
 Arg Ala Ala Ala Val Cys Ser Phe Ile Gly Gly Ile Thr Tyr Leu  
 1 5 10 15

<210> 140  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 140  
 Cys Ser Phe Ile Gly Gly Ile Thr Tyr Leu Ala Thr Phe Gly Ala Ile  
 1 5 10 15  
 Arg Pro

<210> 141  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 14  
 Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn Lys  
 1 5 10 15  
 Met Leu

<210> 142  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 142  
 Arg Pro Ile Leu Phe Val Asn Lys Met Leu Ala Gln Pro Phe Leu Ser  
 1 5 10 15  
 Ser Gln

<210> 143  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 143  
 Met Leu Ala Gln Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met Gly  
 1 5 10 15  
 Ser

<210> 144  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 144  
 Cys Ser Phe Ile Gly Gly Ile Thr Tyr Leu  
 1 5 10

<210> 145  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 145  
 Ser Phe Ile Gly Gly Ile Thr Tyr Leu  
 1 5

<210> 146  
 <211> 8  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 146  
 Phe Ile Gly Gly Ile Thr Tyr Leu  
 1 5

<210> 147  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 147

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Phe | Ile | Gly | Gly | Ile | Thr | Tyr |
| 1   |     |     |     | 5   |     |     |     |     |

&lt;210&gt; 148

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 148

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Phe | Ile | Gly | Gly | Ile | Thr |
| 1   |     |     |     | 5   |     |     |     |

&lt;210&gt; 149

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 149

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Ile | Ile | Gly | Gly | Ile | Thr | Tyr | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

&lt;210&gt; 150

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 150

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Phe | Ile | Gly | Gly | Ile | Thr | Tyr | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

&lt;210&gt; 151

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 151

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Phe | Ile | Gly | Gly | Ile | Thr | Tyr | Leu |
| 1   |     |     |     | 5   |     |     |     |     |

&lt;210&gt; 152

&lt;211&gt; 20

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 152  
 Gln Ile Phe Val Cys Leu Ile Ser Ala Glu Arg Leu Arg Leu Arg Leu  
 1 5 10 15  
 Ser Val Ala Ser  
 20

<210> 153  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 153  
 Glu Arg Leu Arg Leu Arg Leu Ser Val Ala Ser Ser Glu Glu Leu Pro  
 1 5 10 15  
 Thr Ser Arg His  
 20

<210> 154  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 154  
 Ala Ser Ser Glu Glu Leu Pro Thr Ser Arg His Ser Glu Leu Ser Val  
 1 5 10 15  
 Arg Phe Cys Leu  
 20

<210> 155  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 155  
 Arg His Ser Glu Leu Ser Val Arg Phe Cys Leu Ser Thr Lys Cys Trp  
 1 5 10 15  
 Arg Asn Arg Phe  
 20

<210> 156  
 <211> 20  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 156

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Thr | Lys | Cys | Trp | Arg | Asn | Arg | Phe | Phe | Leu | Pro | Lys | Leu | Lys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gln | Ile | Trp | Asp |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 20  |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 157

<211> 53

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 157

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Phe | Val | Cys | Leu | Ile | Ser | Ala | Glu | Arg | Leu | Arg | Leu | Ser | Val | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Ser | Glu | Glu | Leu | Pro | Thr | Ser | Arg | His | Ser | Glu | Leu | Ser | Val | Arg |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Phe | Cys | Leu | Ser | Thr | Lys | Cys | Trp | Arg | Asn | Arg | Phe | Phe | Leu | Pro | Lys |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Leu | Lys | Gln | Ile | Trp |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 158

<211> 52

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 158

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Cys | Val | Ser | His | Lys | Arg | Arg | Ala | Ala | Ala | Ala | Val | Cys | Ser | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ile | Gly | Gly | Ile | Thr | Tyr | Leu | Ala | Thr | Phe | Gly | Ala | Ile | Arg | Pro | Ile |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Leu | Phe | Val | Asn | Lys | Met | Leu | Ala | Gln | Pro | Phe | Leu | Ser | Ser | Gln | Ile |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Lys | Ala | Asn | Met |     |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 159

<211> 24

<212> DNA

<213> Chlamydia

<400> 159

ttttgaagca ggtaggtgaa tatg

24

<210> 160

<211> 24



<212> DNA  
 <213> Chlamydia  
  
 <400> 160  
 ttaagaaatt taaaaaatcc ctta 24  
  
 <210> 161  
 <211> 24  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 161  
 ggtataatat ctctctaaat ttg 24  
  
 <210> 162  
 <211> 19  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 162  
 agataaaaaa ggctgtttc 19  
  
 <210> 163  
 <211> 24  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 163  
 ttttgaagca ggtaggtgaa tatg 24  
  
 <210> 164  
 <211> 29  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 164  
 tttacaataa gaaaagctaa gcactttgt 29  
  
 <210> 165  
 <211> 20  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 165  
 ccttacacag tctgtgac 20  
  
 <210> 166  
 <211> 20  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 166  
 gtttccgggc cctcacattg 20  
  
 <210> 167  
 <211> 9  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 167

Ser Phe Ile Gly Gly Ile Thr Tyr Leu  
1 5

<210> 168

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 168

Ser Ile Ile Gly Gly Ile Thr Tyr Leu  
1 5

<210> 169

<211> 2643

<212> DNA

<213> Chlamydia

<400> 169

|             |             |            |             |            |             |      |
|-------------|-------------|------------|-------------|------------|-------------|------|
| gcaatcatgc  | gacctgatca  | tatgaacttc | tgttgtctat  | gtgctgctat | tttgtcatcc  | 60   |
| acagcgggtcc | tctttggcca  | ggatccctta | ggtgaaaccg  | ccctcctcac | taaaaatcct  | 120  |
| aatcatgtcg  | tctgtacatt  | ttttgaggac | tgtaccatgg  | agagcctctt | tctgtctctt  | 180  |
| tgtgctcatg  | catcacaaga  | cgatcctttg | tatgtacttg  | gaaattccta | ctgttggttc  | 240  |
| gtatctaaac  | tccatatcac  | ggaccccaaa | gaggctcttt  | ttaaagaaaa | aggagatctt  | 300  |
| tccattcaaa  | actttcgctt  | cctttccttc | acagattgct  | cttccaagga | aagctctcct  | 360  |
| tctattattc  | atcaaaagaa  | tggtcagtta | tccttgcgca  | ataatggtag | catgagtttc  | 420  |
| tgtcgaaatc  | atgctgaagg  | ctctggagga | gccatctctg  | cggatgcctt | ttctctacag  | 480  |
| cacaactatc  | ttttcacagc  | ttttgaagag | aattcttcta  | aaggaaatgg | cggagccatt  | 540  |
| caggctcaaa  | ccttctcttt  | atctagaaat | gtgtcgcccta | tttctttcgc | ccgtaatcgt  | 600  |
| gcggatttaa  | atggcggcgc  | tatttgctgt | agtaatctta  | tttgttcagg | gaatgtaaac  | 660  |
| cctctctttt  | tacttgaaa   | ctccgccacg | aatggaggcg  | ctatttggtg | tatcagcgat  | 720  |
| ctaaacacct  | cagaaaaagg  | ctctctctct | cttgcttgta  | accaagaaac | gctatttgca  | 780  |
| agcaattctg  | ctaaagaaaa  | aggcggggct | atztatgcca  | agcacatggg | attgcgttat  | 840  |
| aacggctctg  | tttctttcat  | taacaacagc | gctaaaatag  | gtggagctat | cgccatccag  | 900  |
| tccggaggga  | gtctctctat  | ccttgcaggg | gaaggatctg  | ttctgttcca | gaataactcc  | 960  |
| caacgcacct  | cgcaccaagg  | tctagtaaga | aacgccatct  | acttaragaa | agatgcgatt  | 1020 |
| ctttcttctt  | tagaagctcg  | caacggagat | attcttttct  | ttgatcctat | tgtacaagaa  | 1080 |
| agtagcagca  | agaatcgcc   | tcttccctcc | tctttgcaag  | ccagcgtgac | ttctcccacc  | 1140 |
| ccagccaccg  | catctccttt  | agttattcag | acaagtgcga  | accgttcagt | gattttctcg  | 1200 |
| agcgaacgtc  | tttctgaaga  | agaaaaaact | cctgataacc  | tcacttccca | actacagcag  | 1260 |
| cctatcgaa   | tgaaatccgg  | acgcttagtt | ttaaaagatc  | gcgctgtcct | ttccgcgcct  | 1320 |
| tctctctctc  | aggatcctca  | agctctcctc | attatggaag  | cgggaacttc | tttaaaaact  | 1380 |
| tcctctgatt  | tgaagttagc  | tacgctaagt | attccccttc  | attccttaga | tactgaaaaa  | 1440 |
| agcgtaacta  | tccacgcccc  | taatctttct | atccaaaaga  | tcttcctctc | taactctgga  | 1500 |
| gatgagaatt  | tttatgaaaa  | tgtagagctt | ctcagtaaag  | agcaaaaaca | tattcctctc  | 1560 |
| cttactctcc  | ctaaagagca  | atctcattta | catcttctcg  | atgggaacct | ctcttctcac  | 1620 |
| tttgataatc  | aaggagattg  | gactttttct | tggaaagatt  | ctgatgaagg | gcatttctctg | 1680 |
| attgctaatt  | ggacgcctaa  | aaactatgtg | cctcatccag  | aacgtcaatc | tacactcggt  | 1740 |
| gcgaacactc  | tttggaaacac | ctattccgat | atgcaagctg  | tgcagtcgat | gattaatata  | 1800 |

|             |            |              |            |            |             |      |
|-------------|------------|--------------|------------|------------|-------------|------|
| acagcgcacg  | gaggagccta | tctatTTtTgga | acgtggggat | ctgctgtttc | taattttattc | 1860 |
| tatgtttcacg | acagctctgg | gaaacctatc   | gataattggc | atcatagaag | ccttggctac  | 1920 |
| ctattcggta  | tcagtactca | cagtttagat   | gaccattctt | tctgcttggc | tgcaggacaa  | 1980 |
| ttactcggga  | aatcgtccga | ttccttttatt  | acgtctacag | aaacgacctc | ctatatagct  | 2040 |
| actgtacaag  | cgcaactcgc | tacctctcta   | atgaaaatct | ctgcacaggc | atgtctacaat | 2100 |
| gaaagtatcc  | atgagctaaa | aacaaaaatat  | cgctccttct | ctaaagaagg | attcggatcc  | 2160 |
| tggcatagcg  | ttgcagtatc | cggagaagtg   | tgcgcacgca | ttcctattgt | atccaatggg  | 2220 |
| tccggactgt  | tcagctcctt | ctctatTTtTt  | tctaaactgc | aaggattttc | aggaacacag  | 2280 |
| gacggTTTTg  | aggagagtTt | gggagagatt   | cggTcctTTt | ctgccagctc | tttcagaaat  | 2340 |
| atttcactTt  | ctataggaat | aacattTtgaa  | aaaaaatccc | aaaaaacacg | aacctactat  | 2400 |
| tactttctag  | gagcctacat | ccaagacctg   | aaacgtgatg | tggaatcggg | acctgtagtg  | 2460 |
| ttactcaaaa  | atgccgtctc | ctgggatgct   | cctatggcga | acttggattc | acgagcctac  | 2520 |
| atgttccggc  | ttacgaatca | aagagctcta   | cacagactTt | agacgctgtt | aaatgtgtct  | 2580 |
| tgtgtgctgc  | gtggggcaag | ccatagttac   | tccctggatc | tggggaccac | ttacaggTtT  | 2640 |
| tag         |            |              |            |            |             | 2643 |

&lt;210&gt; 170

&lt;211&gt; 2949

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 170

|             |             |             |              |             |             |      |
|-------------|-------------|-------------|--------------|-------------|-------------|------|
| atgattcctc  | aaggaattta  | cgatggggag  | acgttaactg   | tatcattttcc | ctatactgtt  | 60   |
| ataggagatc  | cgagtgggac  | tactgtTTTT  | tctgcaggag   | agttaacatt  | aaaaaatctt  | 120  |
| gacaatttcta | ttgcagcttt  | gcctTTtaagt | tgtTTtTggga  | acttatttagg | gagtTTtTact | 180  |
| gtTTtTaggga | gaggacactc  | gttgactTTt  | gagaacatac   | ggactTtctac | aaatggggca  | 240  |
| gctctaagta  | atagcgctgc  | tgatggactg  | tttactattg   | agggTTTTaa  | agaattatcc  | 300  |
| TTTTccaatt  | gcaattcatt  | acttgccgta  | ctgcctgctg   | caacgactaa  | taagggttagc | 360  |
| cagactccga  | cgacaacatc  | tacaccgtct  | aatggTacta   | TTtattctaa  | aacagatctt  | 420  |
| ttgtTactca  | ataatgagaa  | gttctcattc  | tatagtaatt   | tagtctctgg  | agatggggga  | 480  |
| gctatagatg  | ctaagagctt  | aacggTTcaa  | ggaattagca   | agctTTgtgt  | cttccaagaa  | 540  |
| aatactgtc   | aagctgatgg  | gggagctTgt  | caagtagtca   | ccagTTtctc  | tgctatggct  | 600  |
| aacgaggctc  | ctattgcctt  | tgtagcgaat  | gttgccaggag  | taagaggggg  | agggattgtc  | 660  |
| gctgtTcagg  | atgggcagca  | gggagtgtca  | tcatctactt   | caacagaaga  | tccagtagta  | 720  |
| agTTTTtcca  | gaaatactgc  | ggtagagTTt  | gatgggaacg   | tagcccaggt  | aggaggaggg  | 780  |
| atttactcct  | acgggaacgt  | tgtTTtctcg  | aataatggaa   | aaacctgtt   | tctcaacaat  | 840  |
| gtTgtTtctc  | ctgtTTacat  | tgtgtctaag  | caaccaacaa   | gtggacaggc  | TTtcaatacg  | 900  |
| agtaataatt  | acggagatgg  | aggagctatc  | TTtctgtaaga  | atggtgcgca  | agcaggatcc  | 960  |
| aataactctg  | gatcagTTt   | ctTTgatgga  | gagggagttag  | TTtctTTtag  | tagcaattgta | 1020 |
| gctgctggga  | aagggggagc  | tattTatgcc  | aaaaagctct   | cggTTgtctaa | ctgtggccct  | 1080 |
| gtacaattTTt | taaggaatat  | cgctaattgat | ggtggagcga   | TTtattTtagg | agaatctgga  | 1140 |
| gagctcagtt  | tatctgctga  | ttatggagat  | attattTTtTcg | atgggaatct  | taaaagaaca  | 1200 |
| gccaaagaga  | atgctgccga  | tgTTaatggc  | gtaactgtgt   | cctcacaagc  | cattTcogatg | 1260 |
| ggatcgggag  | ggaaaataac  | gacattaaga  | gctaaagcag   | ggcatcagat  | tctctTTaat  | 1320 |
| gatcccatcg  | agatggcaaa  | cggaaataac  | cagccagcgc   | agtcttccaa  | actTctaaaa  | 1380 |
| attaacgatg  | gtgaaggata  | cacaggggat  | attgtTTTTg   | ctaattggaag | cagtactTTg  | 1440 |
| taccaaaatg  | ttacgataga  | gcaagggaag  | attgtTcttc   | gtgaaaaggc  | aaaatttatca | 1500 |
| gtgaattctc  | taagtcagac  | aggtgggagt  | ctgtatatgg   | aagctgggag  | tacattggat  | 1560 |
| TTtTgaactc  | cacaaccacc  | acaacagcct  | cctgcgcgta   | atcagTTgat  | cacgctTTtcc | 1620 |
| aatctgcatt  | tgtctctTTt  | TTtTTtTgTTa | gcaaacaaatg  | cagTTtacgaa | tctctctacc  | 1680 |
| aatcctccag  | cgcaagattc  | tcatcctgca  | gtcattTggt   | gcacaactgc  | tggTTctgtt  | 1740 |
| acaattagtg  | ggcctatctt  | TTTTgaggat  | TTggatgata   | cagcttatga  | taggtatgat  | 1800 |
| Tggctaggtt  | ctaatacaaaa | aatcaatgtc  | ctgaaattac   | agTTtagggac | taagccccca  | 1860 |
| gctaattgcc  | catcagattt  | gactctaggg  | aatgagatgc   | ctaagtatgg  | ctatcaagga  | 1920 |
| agctggaagc  | ttgcgtggga  | tcctaataca  | gcaataaatg   | gtccttatac  | tctgaaaagct | 1980 |
| acatggacta  | aaactgggta  | taatcctggg  | cctgagcgag   | tagcttcttt  | ggTTccaat   | 2040 |
| agTTtTatggg | gatccatttt  | agatatacga  | tctgcgcatt   | cagcaattca  | agcaagtgtg  | 2100 |

|             |             |             |            |            |            |      |
|-------------|-------------|-------------|------------|------------|------------|------|
| gatgggcgct  | cttattgtcg  | aggattatgg  | gtttctggag | tttcgaattt | cttctatcat | 2160 |
| gaccgcgatg  | ctttagggtca | gggatatcgg  | tatattagtg | ggggttattc | cttaggagca | 2220 |
| aactcctact  | ttggatcatc  | gatgtttggg  | ctagcattta | ccgaagtatt | tggtagatct | 2280 |
| aaagattatg  | tagtgtgtcg  | ttccaatcat  | catgcttgca | taggatccgt | ttatctatct | 2340 |
| acccaaāaag  | ctttatgtgg  | atcctatttg  | ttcggagatg | cgtttatccg | tgctagctac | 2400 |
| gggtttggga  | atcagcatat  | gaaaacctca  | tatacatttg | cagaggagag | cgatgttcgt | 2460 |
| tgggataata  | actgtctggc  | tgagagagatt | ggagcgggat | taccgattgt | gattactcca | 2520 |
| tctaagctct  | atttgaatga  | gttgcgctct  | ttcgtgcaag | ctgagttttc | ttatgccgat | 2580 |
| catgaatctt  | ttacagagga  | aggcgatcaa  | gctcgggcat | tcaagagcgg | acatctccta | 2640 |
| aatctatcag  | ttcctgttgg  | agtgaagttt  | gatcgatggt | ctagtagaca | tcctaataaa | 2700 |
| tatagcttta  | tggcggctta  | tatctgtgat  | gcttatcgca | ccatctctgg | tactgagaca | 2760 |
| acgctcctat  | cccatcaaga  | gacatggaca  | acagatgcct | ttcatttagc | aagacatgga | 2820 |
| gttggtggtta | gaggatctat  | gtatgcttct  | ctaacaagta | atatagaagt | atatggccat | 2880 |
| ggaagatatg  | agtatcgaga  | tgcttctcga  | ggctatggtt | tgagtgcagg | magtaaagtc | 2940 |
| yggttctaa   |             |             |            |            |            | 2949 |

&lt;210&gt; 171

&lt;211&gt; 2895

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 171

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| atgaaaaaag  | cgttttttctt | tttccttata  | ggaaactccc  | tatcaggact  | agctagagag  | 60   |
| gttcctttcta | gaatcttttct | tatgcccac   | tcagttccag  | atcctacgaa  | agagtcgcta  | 120  |
| tcaaataaaa  | ttagtttgac  | aggagacact  | cacaatctca  | ctaactgcta  | tctcgataac  | 180  |
| ctacgctaca  | tactggctat  | tctacaaaaa  | actcccaatg  | aaggagctgc  | tgccacaata  | 240  |
| acagattacc  | taagctttttt | tgatacacaa  | aaagaaggta  | tttattttgc  | aaaaaatctc  | 300  |
| acccctgaaa  | gtgggtggtgc | gattgggttat | gcgagtecca  | attctcctac  | cgtaggagatt | 360  |
| cgtgatacaa  | taggtcctgt  | aatctttgaa  | aataatactt  | gttgagact   | atttacatgg  | 420  |
| agaaatcctt  | atgctgctga  | taaaataaga  | gaaggcggag  | ccattcatgc  | tcaaaatctt  | 480  |
| tacataaatc  | ataatcatga  | tgtggtcgga  | tttatgaaga  | acttttctta  | tgtccaagga  | 540  |
| ggagccatta  | gtaccgctaa  | tacctttgtt  | gtgagcgaga  | atcagtcttg  | ttttctcttt  | 600  |
| atggacaaca  | tctgtattca  | aactaataca  | gcaggaaaag  | gtggcgctat  | ctatgctgga  | 660  |
| acgagcaatt  | cttttgagag  | taataactgc  | gatctcttct  | tcatacaata  | cgctgttgt   | 720  |
| gcaggaggag  | cgatcttctc  | ccctatctgt  | tctctaacag  | gaaatcgtgg  | taacatcggt  | 780  |
| ttctataaca  | atcgctgctt  | taaaaatgta  | gaaacagctt  | cttcagaagc  | ttctgatgga  | 840  |
| ggagcaatta  | aagtaactac  | tcgcctagat  | gttacaggca  | atcgtggtag  | gatctttttt  | 900  |
| agtgacaata  | tcacaaaaaa  | ttatggcgga  | gctattttacg | ctcctgtagt  | taccctagt   | 960  |
| gataatggcc  | ctacctactt  | tataaacaat  | atcgccaata  | ataagggggg  | cgctatctat  | 1020 |
| atagacggaa  | ccagtaactc  | caaaatttct  | gccgaccgcc  | atgctattat  | ttttaatgaa  | 1080 |
| aatattgtga  | ctaattgtaac | taatgcaaat  | ggtaccagta  | cgtcagctaa  | tcctcctaga  | 1140 |
| agaaatgcaa  | taacagtagc  | aagctcctct  | ggtgaaattc  | tattaggagc  | agggagtagc  | 1200 |
| caaaatttaa  | ttttttatga  | tcctattgaa  | gttagcaatg  | caggggtctc  | tgtgtccttc  | 1260 |
| aataaggaag  | ctgatcaaac  | aggtctctgta | gtattttcag  | gagctactgt  | taattctgca  | 1320 |
| gatttttcac  | aacgcaattt  | acaaacaaaa  | acacctgcac  | cccttactct  | cagtaatggt  | 1380 |
| tttctatgta  | tcgaagatca  | tgctcagctt  | acagtgaate  | gattcacaca  | aactgggggt  | 1440 |
| gttgtttctc  | ttgggaatgg  | agcagttctg  | agttgctata  | aaaatggtac  | aggagattct  | 1500 |
| gctagcaatg  | cctctataac  | actgaagcat  | attggattga  | atctttcttc  | cattctgaaa  | 1560 |
| agtgggtgctg | agattccttt  | attgtgggta  | gagcctacaa  | ataacagcaa  | taactataca  | 1620 |
| gcagatactg  | cagctacctt  | ttcattaaagt | gatgtaaaac  | tctcactcat  | tgatgactac  | 1680 |
| gggaactctc  | cttatgaatc  | cacagatctg  | acccatgctc  | tgcatcaca   | gcctatgcta  | 1740 |
| tctattttctg | aagctagcga  | taaccagcta  | caatcagaaa  | atatagattt  | ttcgggacta  | 1800 |
| aatgtccctc  | attatggatg  | gcaaggactt  | tggaacttggg | gctgggcaaa  | aactcaagat  | 1860 |
| ccagaaccag  | catcttcagc  | aacaatcact  | gatccacaaa  | aagccaatag  | atttcataga  | 1920 |
| accttactac  | taacatggct  | tcctgcccgg  | tatgttctta  | gccccaaaaca | cagaagtccc  | 1980 |
| ctcatagcta  | acaccttatg  | ggggaatatg  | ctgcttgcaa  | cagaaagctt  | aaaaaatagt  | 2040 |
| gcagagctga  | cacctagtgg  | tcctcctttc  | tggggaatta  | caggaggagg  | actaggcatg  | 2100 |

|             |             |            |             |             |            |      |
|-------------|-------------|------------|-------------|-------------|------------|------|
| atggtttacc  | aagatcctcg  | agaaaatcat | cctggattcc  | atatgcgctc  | ttccggatac | 2160 |
| tctgcgggga  | tgatagcagg  | gcagacacac | accttctcat  | tgaaattcag  | tcagacctac | 2220 |
| accaaactca  | atgagcggtta | cgcaaaaaac | aacgtatctt  | ctaaaaatta  | ctcatgccaa | 2280 |
| ggagaaatgc  | tcttctcatt  | gcaagaaggt | ttcttgcctga | ctaaattagt  | tgggctttac | 2340 |
| agctatggag  | accataactg  | tcaccatttc | tatactcaag  | gagaaaaatct | aacatctcaa | 2400 |
| gggacgttcc  | gcagtcaaac  | gatgggaggt | gctgtctttt  | ttgatctccc  | tatgaaaccc | 2460 |
| tttggatcaa  | cgcataact   | gacagctccc | tttttaggtg  | ctcttggtat  | ttattctagc | 2520 |
| ctgtctcaact | ttactgaggt  | gggagcctat | ccgcgaagct  | tttctacaaa  | gactcctttg | 2580 |
| atcaatgtcc  | tagtccctat  | tggagttaaa | ggtagcttta  | tgaatgctac  | ccacagacct | 2640 |
| caagcctgga  | ctgtagaatt  | ggcatacca  | cccgttctgt  | atagacaaga  | accagggatc | 2700 |
| gcgaccagc   | tcctagccag  | taaaggtatt | tggtttggtg  | gtggaagccc  | ctcatcgct  | 2760 |
| catgccatgt  | cctataaaat  | ctcacagcaa | acacaacctt  | tgagttgggt  | aactctccat | 2820 |
| ttccagtatc  | atggattcta  | ctcctcttca | accttctgta  | attatctcaa  | tggggaaatt | 2880 |
| gctctgcgat  | tctag       |            |             |             |            | 2895 |

&lt;210&gt; 172

&lt;211&gt; 4593

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 172

|             |             |             |            |             |             |      |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| atgagttccg  | agaaagatat  | aaaaagcacc  | tgttctaagt | tttctttgtc  | tgtagtagca  | 60   |
| gctatccttg  | cctctgttag  | cgggttagct  | agttgcgtag | atcttcatgc  | tggaggacag  | 120  |
| tctgtaaatg  | agctggtata  | tgtaggccct  | caagcggttt | tattgttaga  | ccaaattcga  | 180  |
| gatctattcg  | ttgggtctaa  | agatagtcag  | gctgaaggac | agtatagggt  | aattgtagga  | 240  |
| gatccaagtt  | ctttccaaga  | gaaagatgca  | gatactcttc | ccgggaaggt  | agagcaaagt  | 300  |
| actttgttct  | cagtaacca   | tcccgtgggt  | ttccaagggt | tggaccaaca  | ggatcaagtc  | 360  |
| tcttcccaag  | ggttaatttg  | tagttttacg  | agcagcaacc | ttgattctcc  | ccgtgacgga  | 420  |
| gaatcttttt  | taggtattgc  | ttttgttggg  | gatagtagta | aggctggaat  | cacattaact  | 480  |
| gacgtgaaag  | cttctttgtc  | tggagcggct  | ttatattcta | cagaagatct  | tatctttgaa  | 540  |
| aagattaaag  | gtggattgga  | atttgcata   | tgttcttctc | tagaacaggg  | gggagcttgt  | 600  |
| gcagctcaaa  | gtattttgat  | tcattgattgt | caaggattgc | agggttaaaca | ctgtactaca  | 660  |
| gccgtgaatg  | ctgaggggtc  | tagtgcgaa   | gatcatcttg | gatttggagg  | aggcgctttc  | 720  |
| tttggttacg  | gttctctttc  | tggagagaaa  | agtctctata | tgcttcgagg  | agatatggta  | 780  |
| gttgcgaaat  | gtgatggggc  | tatatctttt  | gaaggaaaca | gcgcgaactt  | tgctaattgga | 840  |
| ggagcgattg  | ctgcctctgg  | gaaagtgcct  | tttgtcgcta | atgataaaaa  | gacttctttt  | 900  |
| atagagaacc  | gagctttgtc  | tggaggagcg  | attgcagcct | cttctgatat  | tgcccttcaa  | 960  |
| aactgcgcag  | aactagtttt  | caaaggcaat  | tgtgcaattg | gaacagagga  | ttaaaggttct | 1020 |
| ttaggtggag  | gggctatata  | ttctctaggc  | accgttcttt | tgcaagggaa  | tcacgggata  | 1080 |
| acttgtgata  | agaatgagtc  | tgcttcgcaa  | ggaggcgcca | tttttgccaa  | aaattgtcag  | 1140 |
| atttctgaca  | acgaggggccc | agtggttttc  | agagatagta | cagcttgctt  | aggaggaggc  | 1200 |
| gctattgcag  | ctcaagaaat  | tgtttctatt  | cagaacaatc | aggctgggat  | ttccttcgag  | 1260 |
| ggaggttaagg | ctagtttcgg  | aggaggtatt  | gcgtgtggat | ctttttcttc  | cgcaggcggt  | 1320 |
| gcttctgttt  | tagggactat  | tgatatttcg  | aagaatttag | gcgcgatttc  | gttctctcgt  | 1380 |
| actttatgta  | cgacctcaga  | tttaggacaa  | atggagtacc | agggaggagg  | agctctattt  | 1440 |
| ggtgaaaata  | tttctctttc  | tgagaatgct  | ggtgtgctca | ccttttaaaga | caacatttgt  | 1500 |
| aagacttttg  | cttcgaatgg  | gaaaattctg  | ggaggaggag | cgatttttagc | tactggtaag  | 1560 |
| gtggaaatta  | ccaataattc  | cggaggaatt  | tcttttacag | gaaatgcgag  | agctccacaa  | 1620 |
| gctcttccaa  | ctcaagagga  | gtttccttta  | ttcagcaaaa | aagaaggggc  | accactctct  | 1680 |
| tcaggatatt  | ctgggggagg  | agcgatttta  | ggaagagaag | tagctattct  | ccacaacgct  | 1740 |
| gcagtagtat  | ttgagcaaaa  | tcgtttgcag  | tcagcgaag  | aagaagcgac  | attattaggt  | 1800 |
| tgttggtggg  | gaggcgctgt  | tcattgggat  | gatagcactt | cgattgttgg  | caactcttca  | 1860 |
| gtaagatttg  | gtaataatta  | cgcaatggga  | caaggagtct | caggaggagc  | tcttttatct  | 1920 |
| aaaacagtgc  | agtttagctgg | aaatggaagc  | gtcgattttt | ctcgaaatat  | tgctagtttg  | 1980 |
| ggaggaggag  | ctcttcaagc  | ttctgaagga  | aattgtgagc | tagttgataa  | cggctatgtg  | 2040 |
| ctattcagag  | ataatcgagg  | gagggtttat  | gggggtgcta | tttcttgctt  | acgtggagat  | 2100 |
| gtagtcattt  | ctggaaacaa  | gggttagagtt | gaatttaaag | acaacatagc  | aacacgtctt  | 2160 |

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| tatgtggaag  | aaactgtaga  | aaagggttgaa | gaggtagagc  | cagctcctga  | gcaaaaagac  | 2220 |
| aataatgagc  | tttcttttctt | agggagtgta  | gaacagagtt  | ttattactgc  | agctaataca  | 2280 |
| gctctttttcg | catctgaaga  | tggggattta  | tcacctgagt  | catccatttc  | ttctgaagaa  | 2340 |
| cttgcgaaaa  | gaagagagtg  | tgctggagga  | gctatttttg  | caaaacgggt  | tcgtattgta  | 2400 |
| gataaccaag  | aggccgttgt  | attctcgaat  | aacttctctg  | atatttatgg  | cggcgccatt  | 2460 |
| tttacaggtt  | ctcttcgaga  | agaggataag  | ttagatgggc  | aaatccctga  | agtcttgatc  | 2520 |
| tcaggcaatg  | caggggatgt  | tgttttttcc  | ggaaattcct  | cgaagcgtga  | tgagcatctt  | 2580 |
| cctcatacag  | gtgggggagc  | catttgtaact | caaaatttga  | cgatttctca  | gaatacaggg  | 2640 |
| aatgttctgt  | tttataacaa  | cgtggcctgt  | tcgggaggag  | ctgttcgtat  | agaggatcat  | 2700 |
| ggtaatgttc  | ttttagaagc  | ttttggagga  | gatattgttt  | ttaaaggaaa  | ttcttctttc  | 2760 |
| agagcacaag  | gatccgatgc  | tatctatttt  | gcaggtaaa   | aatcgcatat  | tacagccctg  | 2820 |
| aatgctacgg  | aaggacatgc  | tattgttttc  | cacgacgcac  | tagtttttga  | aaatctaaaa  | 2880 |
| gaaaggaaat  | ctgctgaagt  | attgttaatc  | aatagtcgag  | aaaatccagg  | ttacactgga  | 2940 |
| tctattcgat  | ttttagaagc  | agaaagtaaa  | gttccctcaat | gtattcatgt  | acaacaagga  | 3000 |
| agccttgagt  | tgctaaatgg  | agctacatta  | tgtagttaatg | gttttaaaaca | agatgctgga  | 3060 |
| gctaagttgg  | tattggctgc  | tggaatctaaa | ctgaagattt  | tagattcagg  | aactcctgta  | 3120 |
| caagggcatg  | ctatcagtaa  | acctgaagca  | gaaatcgagt  | catcttctga  | accagagggg  | 3180 |
| gcacattctc  | tttggattgc  | gaagaatgct  | caaacaacag  | ttcctatggg  | tgatatccat  | 3240 |
| actatttctg  | tagattttagc | ctccttctct  | tctagtcaac  | aggaggggac  | agtagaagct  | 3300 |
| cctcagggtta | ttgttcctgg  | aggaagttat  | gttcgatctg  | gagagcttaa  | tttggagtta  | 3360 |
| gttaacacaa  | caggactctg  | ttatgaaaat  | catgctttgt  | tgaagaatga  | ggctaaagtt  | 3420 |
| ccattgatgt  | ctttcgttgc  | ttctagtgtg  | gaagcttcag  | ccgaaatcag  | taacttgtcg  | 3480 |
| gtttctgatt  | tacagattca  | tgtagcaact  | ccagagattg  | aagaagacac  | atacggccat  | 3540 |
| atgggagatt  | ggctctgagg  | taaaattcaa  | gatggaactc  | ttgtcattaa  | ttggaatcct  | 3600 |
| actggatatc  | gatttagatcc | tcaaaaagca  | ggggcttttag | tatttaaatgc | attatgggaa  | 3660 |
| gaaggggctg  | tcttgtctgc  | tctgaaaaat  | gcacgctttg  | ctcataatct  | caactgctcag | 3720 |
| cgtatggaat  | tcgattatct  | tacaaatgtg  | tggggattcg  | cctttgggtg  | tttccgaact  | 3780 |
| ctatctgcag  | agaatctggt  | tgctattgat  | ggatacaaa   | gagcttatgg  | tggtgcttct  | 3840 |
| gctggagtcg  | atattcaatt  | gatggaagat  | tttgttctag  | gagtttagtg  | agctgctttc  | 3900 |
| ctaggtaaaa  | tggatagtca  | gaagtttgat  | gcggaggttt  | ctcgggaagg  | agttgttggt  | 3960 |
| tctgtatata  | caggattttt  | agctggatcc  | tggttcttca  | aaggacaata  | tagccttgga  | 4020 |
| gaaacacaga  | acgatatgaa  | aacgcgttat  | ggagtactag  | gagagtcgag  | tgcttcttgg  | 4080 |
| acatctcgag  | gagtaactgg  | agatgcttta  | gttgaatacc  | gaagtttagt  | tggtcctgtg  | 4140 |
| agacctactt  | tttatgcttt  | gcatttcaat  | ccttatgtcg  | aagtatctta  | tgcttctatg  | 4200 |
| aaattccctg  | gctttacaga  | acaaggaaga  | gaagcgcgtt  | cttttgaaga  | cgcttccctt  | 4260 |
| accaatatca  | ccattccctt  | agggatgaag  | tttgaattgg  | cgttcataaa  | aggacagttt  | 4320 |
| tcagaggtga  | actctttggg  | aataagttat  | gcatgggaag  | cttatcgaaa  | agtagaagga  | 4380 |
| ggcgcggtgc  | agctttttaga | agctgggttt  | gattgggagg  | gagctccaat  | ggatcttctt  | 4440 |
| agacaggagc  | tgcgtgtcgc  | tctggaaaa   | aatacggaat  | ggagttctta  | cttcagcaca  | 4500 |
| gtcttaggat  | taacagcttt  | ttgtggagga  | tttacttcta  | cagatagtaa  | actaggatat  | 4560 |
| gaggcgaaata | ctggattgcg  | attgatcttt  | ttaa        |             |             | 4593 |

<210> 173  
 <211> 5331  
 <212> DNA  
 <213> Chlamydia

|             |            |             |             |            |            |     |
|-------------|------------|-------------|-------------|------------|------------|-----|
| <400> 173   |            |             |             |            |            |     |
| gcaatcatga  | aatttatgtc | agctactgct  | gtatttgcgtg | cagtactctc | ctccgttact | 60  |
| gaggcgagct  | cgatccaaga | tcaaataaag  | aataccgact  | gcaatgttag | caaagtagga | 120 |
| tattcaactt  | ctcaagcatt | tactgatatg  | atgctagcag  | acaacacaga | gtatcgagct | 180 |
| gctgatagtg  | tttcattcta | tgacttttctg | acatcttccg  | gattacctag | aaaacatctt | 240 |
| agtagtagta  | gtgaagcttc | tccaacgaca  | gaaggagtg   | cttcatcttc | atctggagaa | 300 |
| aataactgaga | attcacaaga | ttcagctccc  | tcttctggag  | aaactgataa | gaaaacagaa | 360 |
| gaagaactag  | acaattggcg | aatcatttat  | gctagagaga  | aactaactat | ctcagaatct | 420 |
| caggactctc  | tctctaattc | aagcatagaa  | ctccatgaca  | atagtttttt | cttcggagaa | 480 |
| ggtgaagtta  | tctttgatca | cagagttgcc  | ctcaaaaacg  | gaggagctat | ttatggagag | 540 |

|             |             |             |             |             |             |      |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| aaagaggtag  | tctttgaaaa  | cataaaatct  | ctactagtag  | aagtaaatat  | ctcggtcgag  | 600  |
| aaaggggta   | gcgtctatgc  | aaaagaacga  | gtatcttttag | aaaatgttac  | cgaagcaacc  | 660  |
| ttctcctcca  | atgggtggga  | acaaggtggg  | gggtggaatct | attcagaaca  | agatatgtta  | 720  |
| atcagtgatt  | gcaacaatgt  | acattttccaa | gggaatgctg  | caggagcaac  | agcagtaaaa  | 780  |
| caatgtctgg  | atgaagaaat  | gacgtatttg  | ctcacagaat  | gcgttgatag  | cttatccgaa  | 840  |
| gatacactgg  | atagcactcc  | agaaacggaa  | cagactaagt  | caaatggaaa  | tcaagatggt  | 900  |
| tcgtctgaaa  | caaaagatac  | acaagtatca  | gaatcaccag  | aatcaactcc  | tagccccgac  | 960  |
| gatgttttag  | gtaaagggtg  | tggtatctat  | acagaaaaat  | ctttgaccat  | cactggaatt  | 1020 |
| acagggacta  | tagattttgt  | cagtaacata  | gctaccgatt  | ctggagcagg  | tgtattcact  | 1080 |
| aaagaaaact  | tgtcttgac   | caacacgaat  | agcctacagt  | ttttgaaaaa  | ctcggcagg   | 1140 |
| caacatggag  | gaggagccta  | cgttactcaa  | accatgtctg  | ttactaatac  | aactagttaa  | 1200 |
| agtataacta  | ctccccctct  | cgtaggagaa  | gtgattttct  | ctgaaaaatac | agctaaaggg  | 1260 |
| cacggtggtg  | gtatctgcac  | taacaaaactt | tctttatcta  | atttaaaaaac | ggtgactctc  | 1320 |
| actaaaaact  | ctgcaaagga  | gtctggagga  | gctattttta  | cagatctagc  | gtctatacca  | 1380 |
| acaacagata  | ccccagagtc  | ttctaccccc  | tcttctctct  | cgcttgcaag  | cactccccgaa | 1440 |
| gtagttgctt  | ctgctaaaat  | aaatcgattc  | tttgccctcta | cggcagaacc  | ggcagccccct | 1500 |
| tctctaacag  | aggctgagtc  | tgatcaaacg  | gatcaaacag  | aaacttctga  | tactaatagc  | 1560 |
| gatatagacg  | tgtcgattga  | gaacattttg  | aatgtcgcta  | tcaatcaaaa  | cacttctgcg  | 1620 |
| aaaaaaggag  | gggctattta  | cgggaaaaaa  | gctaaacttt  | cccgatttaa  | caatcttgaa  | 1680 |
| ctttcaggga  | attcatccca  | ggatgtagga  | ggagggtctct | gtttaactga  | aagcgtagaa  | 1740 |
| tttgatgcaa  | ttggatcgct  | cttatcccac  | tataactctg  | ctgctaaaga  | aggtgggggt  | 1800 |
| attcatttcta | aaacggttac  | tctatctaac  | ctcaagtcta  | ccttcacttt  | tgcagataac  | 1860 |
| actgttaaag  | caatagtaga  | aagcactcct  | gaagctccag  | aagagattcc  | tccagtagaa  | 1920 |
| ggagaagagt  | ctacagcaac  | agaaaatccg  | aattctaata  | cagaagggaag | ttcggctaac  | 1980 |
| actaaccttg  | aaggatctca  | aggggatact  | gctgatacag  | ggactgggtg  | tgttaacaat  | 2040 |
| gagtctcaag  | acacatcaga  | tactggaaac  | gctgaatctg  | gagaacaact  | acaagattct  | 2100 |
| acacaatcta  | atgaagaaaa  | tacccttccc  | aatagtagta  | ttgatcaatc  | taacgaaaac  | 2160 |
| acagacgaat  | catctgatag  | ccacactgag  | gaaataactg  | acgagagtg   | ctcatcgctc  | 2220 |
| tctaaaagtg  | gatcatctac  | tcctcaagat  | ggaggagcag  | cttcttcagg  | ggctccctca  | 2280 |
| ggagatcaat  | ctatctctgc  | aaacgcttgt  | ttagctaaaa  | gctatgctgc  | gagtactgat  | 2340 |
| agctccccctg | tatctaattc  | ttcaggttca  | gacgttactg  | catcttctga  | taatccagac  | 2400 |
| tcttctcat   | ctggagatag  | cgctggagac  | tctgaaggac  | cgactgagcc  | agaagctggt  | 2460 |
| tctacaacag  | aaactcctac  | tttaatagga  | ggagggtgcta | tctatggaga  | aactgttaag  | 2520 |
| attgagaact  | tctctggcca  | aggaatat    | tctggaaaca  | aagctatcga  | taacaccaca  | 2580 |
| gaaggctcct  | cttccaaatc  | taacgtcctc  | ggagggtgcg  | tctatgctaa  | aacattgttt  | 2640 |
| aatctcgata  | gcgggagctc  | tagacgaact  | gtcaccttct  | ccgggaatac  | tgtctcttct  | 2700 |
| caatctacaa  | caggtcagg   | tgtctggagga | gctatctact  | ctcctactgt  | aaccattgct  | 2760 |
| actcctgtag  | tattttctaa  | aaactctgca  | acaaacaatg  | ctaataacgc  | tacagatact  | 2820 |
| cagagaaaag  | acacctttgg  | aggagctatc  | ggagctactt  | ctgctgtttc  | tctatcagga  | 2880 |
| ggggctcatt  | tcttagaaaa  | cgttgctgac  | ctcggactctg | ctattggggt  | gggtgccagac | 2940 |
| acacaaaata  | cagaaacagt  | gaaattagag  | tctggctcct  | actactttga  | aaaaaataaa  | 3000 |
| gctttaaaac  | gagctactat  | ttacgcacct  | gtcgtttcca  | ttaaagccta  | tactgcgaca  | 3060 |
| tttaaccaaa  | acagatctct  | agaagaagga  | agcgcgattt  | actttacaaa  | agaagcatct  | 3120 |
| attgagtctt  | taggctctgt  | tctcttcaca  | ggaaacttag  | taaccccaac  | gctaagcaca  | 3180 |
| actacagaag  | gcacaccagc  | cacaacctca  | ggagatgtaa  | caaaatatgg  | tgtctgtatc  | 3240 |
| tttgagcaaa  | tagcaagctc  | aaacggatct  | cagacggata  | accttccccct | gaaactcatt  | 3300 |
| gcttcaggag  | gaaatatattg | tttccgaaac  | aatgaatacc  | gtcctacttc  | ttctgatacc  | 3360 |
| ggaacctcta  | ctttctgtag  | tattgcggga  | gatgttaaat  | taaccatgca  | agctgcaaaa  | 3420 |
| gggaaaacga  | tcagtttctt  | tgatgcaatc  | cggacctcta  | ctaagaaaac  | aggtacacag  | 3480 |
| gcaactgcct  | acgatactct  | cgatattaat  | aaatctgagg  | attcagaaac  | tgtaaactct  | 3540 |
| gcgtttacag  | gaacgattct  | gttctcctct  | gaattacatg  | aaaataaatc  | ctatattcca  | 3600 |
| caaaacgtag  | ttctacacag  | tggatctctt  | gtattgaagc  | caaataccga  | gcttcatgtc  | 3660 |
| atttcttttg  | agcagaaaaga | aggctcttct  | ctcgttatga  | cacctggatc  | tgttctttcg  | 3720 |
| aaccagactg  | ttgctgatgg  | agctttgggtc | ataaataaca  | tgaccattga  | tttatccagc  | 3780 |
| gtagagaaaa  | atgggtattgc | tgaaggaaat  | atctttactc  | ctccagaatt  | gagaatcata  | 3840 |
| gacactacta  | caagtggaaag | cgggtggaacc | ccatctacag  | atagtgaag   | taaccagaat  | 3900 |
| agtgatgata  | ccaaggagca  | aaataataat  | gacgcctcga  | atcaaggaga  | aagcgcgaat  | 3960 |

|            |            |            |             |            |            |      |
|------------|------------|------------|-------------|------------|------------|------|
| ggatcgtctt | ctcctgcagt | agctgctgca | cacacatctc  | gtacaagaaa | ctttgccgct | 4020 |
| gcagctacag | ccacacctac | gacaacacca | acggctacaa  | ctacaacaag | caaccaagta | 4080 |
| atcctaggag | gagaaatcaa | actcatcgat | cctaattggga | ccttcttcca | gaaccctgca | 4140 |
| ttaagatccg | accaacaaat | ctccttggtt | gtgctcccta  | cagactcatc | aaaaatgcaa | 4200 |
| gctcagaaaa | tagtactgac | gggtgataat | gctcctcaga  | aaggatatac | aggaacactc | 4260 |
| actctggatc | ctgatcaact | acaaaatgga | acgatctcag  | cgctctggaa | atttgactct | 4320 |
| tatagacaat | gggcttatgt | acctagagac | aatcatttct  | atgcgaactc | gattctggga | 4380 |
| tctcaaagt  | caatggtcac | agtcaaaaa  | ggcttgctca  | acgataaaat | gaatctagct | 4440 |
| cgctttgatg | aagttagcta | taacaacctg | tggatatcag  | gactaggaac | gatgctatcg | 4500 |
| caagtaggaa | cacctacttc | tgaagaattc | acttattaca  | gcagaggagc | ttctgttgcc | 4560 |
| ttagatgcta | aaccagccca | tgatgtgatt | gttgaggctg  | catttagtaa | gatgatcggg | 4620 |
| aaaacaaaa  | ccttgaaaag | agagaataac | tacactcaca  | aaggatccga | atattcttac | 4680 |
| caagcatcgg | tatacggagg | caaaccattc | cactttgtaa  | tcaataaaaa | aacggaaaaa | 4740 |
| tcgctaccgc | tattgttaca | aggagtcatc | tcttacggat  | atatcaaaca | tgatacagtg | 4800 |
| actcactatc | caacgatccg | tgaacgaaac | caaggagaat  | gggaagactt | aggatggctg | 4860 |
| acagctctcc | gtgtctcctc | tgtcttaaga | actcctgcac  | aaggggatac | taaacgtatc | 4920 |
| actgtttacg | gagaattgga | atactccagt | atccgtcaga  | aacaattcac | agaaacagaa | 4980 |
| tacgatcctc | gttacttcga | caactgcacc | tatagaaact  | tagcaattcc | tatgggggta | 5040 |
| gcattcgaag | gagagctctc | tggtaacgat | atthttgatgt | acaacagatt | ctctgtagca | 5100 |
| tacatgccat | caatctatcg | aaattctcca | acatgcaaat  | accaagtgtc | ctcttcagga | 5160 |
| gaaggcggag | aaattatttg | tggagtaccg | acaagaaact  | cagctcgcgg | agaatacagc | 5220 |
| acgcagctgt | acccgggacc | tttgtggact | ctgtatggat  | cctacacgat | agaagcagac | 5280 |
| gcacatacac | tagctcatat | gatgaactgc | ggtgctcgta  | tgacattcta | a          | 5331 |

<210> 174  
 <211> 5265  
 <212> DNA  
 <213> Chlamydia

|             |             |            |             |             |             |      |
|-------------|-------------|------------|-------------|-------------|-------------|------|
| <400> 174   |             |            |             |             |             |      |
| gcaatcatga  | aatggctgtc  | agctactgcg | gtgtttgctg  | ctgtttctccc | ctcagttttca | 60   |
| gggttttgct  | tcccagaacc  | taaagaatta | aattttctctc | gcgtagaaac  | ttcttcctct  | 120  |
| accactttta  | ctgaaacaat  | tggagaagct | ggggcagaat  | atatcgctc   | tggtaacgca  | 180  |
| tctttcacaa  | aattttacca  | cattcctact | accgatacaa  | caactcccac  | gaactcaaac  | 240  |
| tcctctagct  | ctagcggaga  | aactgcttcc | gtttctgagg  | atagtgactc  | tacaacaacg  | 300  |
| actcctgac   | ctaaaggtgg  | cggcgccctt | tataacgcgc  | actccggagt  | tttgtccttt  | 360  |
| atgacacgat  | caggaaacga  | aggttcctta | actctgtctg  | agataaaaa   | gactggtgaa  | 420  |
| ggcgggtgcta | tcttctctca  | aggagagctg | ctattttacag | atctgacaag  | tctaaccatc  | 480  |
| caaaataaact | tatcccagct  | atccggagga | gcgatttttg  | gaggatctac  | aatctcccta  | 540  |
| tcagggatta  | ctaaagcgac  | tttctcctgc | aactctgcag  | aagttcctgc  | tcctgttaag  | 600  |
| aaacctacag  | aacctaaagc  | tcaaacagca | agcgaaacgt  | cgggttctag  | tagttctagc  | 660  |
| ggaaatgatt  | cggtgtcttc  | ccccagttcc | agtagagctg  | aaccgcgagc  | agctaattctt | 720  |
| caaagtcaact | ttattttgtgc | tacagctact | cctgctgctc  | aaaccgatac  | agaaacatca  | 780  |
| actccctctc  | ataagccagg  | atctggggga | gctatctatg  | ctaaaggcga  | ccttactatc  | 840  |
| gcagactctc  | aagaggtact  | attctcaata | aataaagcta  | ctaaagatgg  | aggagcgatc  | 900  |
| tttgctgaga  | aagatgtttc  | tttcgagaat | attacatcat  | taaaagtaca  | aactaacggt  | 960  |
| gctgaagaaa  | agggaggagc  | tatctatgct | aaaggtgacc  | tctcaattca  | atcttctaaa  | 1020 |
| cagagtcttt  | ttaattctaa  | ctacagtaaa | caaggtgggg  | gggctctata  | tgttgaagga  | 1080 |
| ggtataaact  | tccaagatct  | tgaagaaatt | cgcattaagt  | acaataaagc  | tggaacgttc  | 1140 |
| gaaacaaaaa  | aaatcacttt  | accttcttta | aaagctcaag  | catctgcagg  | aaatgcagat  | 1200 |
| gcttgggcct  | cttccctctc  | tcaatctggg | tctggagcaa  | ctacagtctc  | cgactcagga  | 1260 |
| gactctagct  | ctggctcaga  | ctcgatacc  | tcagaaacag  | ttccagtcac  | agctaaaggc  | 1320 |
| ggtgggcttt  | atactgataa  | gaatctttcg | attactaaca  | tcacaggaat  | tatcgaaatt  | 1380 |
| gcaaataaca  | aagcgacaga  | tgttgagggt | ggtgcttacg  | taaaaggaaac | ccttacttgt  | 1440 |
| gaaaactctc  | accgtctaca  | atthttgaaa | aactcttccg  | ataaacaagg  | tggaggaatc  | 1500 |



|             |            |             |             |            |             |      |
|-------------|------------|-------------|-------------|------------|-------------|------|
| tacggagaag  | acaacatcac | cctatcta    | ttgacaggga  | agactctatt | ccaagagaat  | 1560 |
| actgccaaag  | aagagggcgg | tggactcttc  | ataaaaggta  | cagataaagc | tcttacaatg  | 1620 |
| acaggactgg  | atagtttctg | tttaattaat  | aacacatcag  | aaaaacatgg | tggtggagcc  | 1680 |
| tttgttacca  | aagaaatctc | tcagacttac  | acctctgatg  | tggaacaat  | tccaggaatc  | 1740 |
| acgcctgtac  | atggtgaaac | agtcattact  | ggcaataaat  | ctacaggagg | taatggtgga  | 1800 |
| ggcgtgtgta  | caaaacgtct | tgccttatct  | aaccttcaaa  | gcatttctat | atccgggaat  | 1860 |
| tctgcagcag  | aaaatggtgg | tggagcccac  | acatgccag   | atagcttccc | aacggcggat  | 1920 |
| actgcagaac  | agcccgagc  | agcttctgcc  | gcgacgtcta  | ctcccaaate | tgccccggtc  | 1980 |
| tcaactgctc  | taagcacacc | ttcatcttct  | accgtctctt  | cattaacctt | actagcagcc  | 2040 |
| tcttcacaag  | cctctcctgc | aacctcta    | aaggaaactc  | aagatcctaa | tgctgatata  | 2100 |
| gacttattga  | tcgattatgt | agttgatacg  | actatcagca  | aaaacactgc | taagaaaggc  | 2160 |
| ggtggaatct  | atgctaaaaa | agccaagatg  | tcccgcatag  | accaactgaa | tatctctgag  | 2220 |
| aactccgcta  | cagagatagg | tggaggatc   | tgctgtaaag  | aatctttaga | actagatgct  | 2280 |
| ctagtctcct  | tatctgtaac | agagaacctt  | gttgggaaag  | aaggtggagg | cttacatgct  | 2340 |
| aaaactgtaa  | atatttctaa | tctgaaatca  | ggcttctctt  | tctcgaacaa | caaagcaaac  | 2400 |
| tcctcatcca  | caggagtcgc | aacaacagct  | tcagcacctg  | ctgcagctgc | tgcttcccta  | 2460 |
| caagcagccg  | cagcagccgc | accatcatct  | ccagcaacac  | caacttatte | aggtgtagta  | 2520 |
| ggaggagcta  | tctatggaga | aaaggttaca  | ttctctcaat  | gtagcgggac | ttgtcagttc  | 2580 |
| tctgggaacc  | aagctatcga | taacaatccc  | tcccaatcat  | cgttgaacgt | acaaggagga  | 2640 |
| gccatctatg  | ccaaaacctc | tttgtctatt  | ggatcttccg  | atgctggaac | ctcctatatt  | 2700 |
| ttctcgggga  | acagtgtctc | cactgggaaa  | tctcaaacaa  | cagggcaaat | agcgggagga  | 2760 |
| gcgatctact  | cccctactgt | tacattgaat  | tgctctgcga  | cattctctaa | caatacagcc  | 2820 |
| tctatagcta  | caccgaagac | ttcttctgaa  | gatggatcct  | caggaaattc | tattaaagat  | 2880 |
| accattggag  | gagccattgc | agggacagcc  | attacctat   | ctggagtctc | tcgattttca  | 2940 |
| gggaatacgg  | ctgatttagg | agctgcaata  | ggaactctag  | ctaatagcaa | tacaccaggt  | 3000 |
| gcaactagcg  | gatctcaaaa | tagcattaca  | gaaaaaatta  | ctttagaaaa | cggttctttt  | 3060 |
| atTTTTGAAA  | gaaaccaagc | taataaacgt  | ggagcgattt  | actctcctag | cgtttccatt  | 3120 |
| aaagggaata  | atattacctt | caatcaaaat  | acatccactc  | atgatggaag | cgctatctac  | 3180 |
| tttacaAAAAG | atgctacgat | tgagtcttta  | ggatctgttc  | tttttacagg | aaataacggt  | 3240 |
| acagctacac  | aagctagttc | tgcaacatct  | ggacaaaata  | caaatactgc | caacttatggg | 3300 |
| gcagccatct  | ttggagatcc | aggaaccact  | caatcgtctc  | aaacagatgc | catttttaacc | 3360 |
| cttcttgctt  | cttctggaaa | cattactttt  | agcaacaaca  | gtttacagaa | taaccaaggt  | 3420 |
| gatactcccg  | ctagcaagtt | ttgtagtatt  | gcaggatacg  | tcaaactctc | tctacaagcc  | 3480 |
| gctaaaggga  | agactattag | ctttttcgat  | tgtgtgcaca  | cctctaccaa | aaaaacaggt  | 3540 |
| tcaacacaaa  | acgtttatga | aacttttagat | attaataaag  | aagagaacag | taatccatat  | 3600 |
| acaggaaacta | ttgtgttctc | ttctgaatta  | catgaaaaca  | aatcttacat | cccacagaat  | 3660 |
| gcaatccttc  | acaacggaac | tttagttctt  | aaagagaaaa  | cagaactcca | cgtagtctct  | 3720 |
| tttgagcaga  | aagaagggtc | taaattaaat  | atggaaccgg  | gagctgtggt | atctaaccaa  | 3780 |
| aacatagcta  | acggagctct | agctatcaat  | gggttaacga  | ttgatctttc | cagtaggggg  | 3840 |
| actcctcaag  | caggggaaat | cttctctcct  | ccagaattac  | gtatcgttgc | cacgacctct  | 3900 |
| agtgcattcg  | gagggaagcg | ggtcagcagt  | agtataccaa  | caaataccta | aaggattttct | 3960 |
| gcagcagtcg  | cttcagggtc | tgcgcgaact  | actccaacta  | tgagcgagaa | caaagttttc  | 4020 |
| ctaacaggag  | accttacttt | aatagatcct  | aatggaaact  | tttaccaaaa | ccctatgtta  | 4080 |
| ggaagcgatc  | tagatgtacc | actaattaag  | cttccgacta  | acacaagtga | cgtccaagtc  | 4140 |
| tatgatttaa  | ctttatctgg | ggatcttttc  | cctcagaaaag | ggtacatggg | aacctggaca  | 4200 |
| ttagattcta  | atccacaaac | agggaaactt  | caagccagat  | ggacattcga | tacctatcgt  | 4260 |
| cgctgggtat  | acatacctag | ggataatcat  | ttttatgcga  | actctatctt | aggctcccaa  | 4320 |
| aactcaatga  | ttgttgtgaa | gcaagggctt  | atcaacaaca  | tgttgaataa | tgcccgtctc  | 4380 |
| gatgatatacg | cttacaataa | cttctgggtt  | tcaggagtag  | gaactttctt | agctcaacaa  | 4440 |
| ggaactcctc  | tttccgaaga | attcagttac  | tacagccgcg  | gaacttcagt | tgccatcgat  | 4500 |
| gccaaacctta | gacaagattt | tatcctagga  | gctgcattta  | gtaagatagt | ggggaaaacc  | 4560 |
| aaagccatca  | aaaaaatgca | taattacttc  | cataagggct  | ctgagtactc | ttaccaagct  | 4620 |
| tctgtctatg  | gaggtaaatt | cctgtatttc  | ttgtcaata   | agcaacatgg | ttgggcactt  | 4680 |
| cctttcctaa  | tacaaggagt | cgtgtcctat  | ggacatatta  | aacatgatac | aacaacactt  | 4740 |
| tacccttcta  | tccatgaaag | aaataaagga  | gattgggaag  | atttaggatg | gttagcggat  | 4800 |
| cttcgtatct  | ctatggatct | taaagaacct  | tctaagatt   | cttctaaccg | gatcactgtc  | 4860 |
| tatggggaaac | tcgagtattc | cagcattcgc  | cagaaacagt  | tcacagaaat | cgattacgat  | 4920 |

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ccaagacact tcgatgattg tgcttacaga aatctgtcgc ttccctgtggg atgcgctgtc 4980
gaaggagcta tcatgaactg taatattctt atgtataata agcttgcatc agcctacatg 5040
ccttctatct acagaaataa tcctgtctgt aaatatcggg tattgtcttc gaatgaagct 5100
gggtcaagtta tctgcggagt gccaaactaga acctctgcta gagcagaata cagtactcaa 5160
ctatatcttg gtcccttctg gactctctac ggaaactata ctatcgatgt aggcattgat 5220
acgctatcgc aaatgactag ctgcggtgct cgcattgatc tctaa 5265

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<210> 175  
 <211> 880  
 <212> PRT  
 <213> Chlamydia

<220>  
 <221> VARIANT  
 <222> (1)...(880)  
 <223> Xaa = Any Amino Acid

<400> 175

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ile | Met | Arg | Pro | Asp | His | Met | Asn | Phe | Cys | Cys | Leu | Cys | Ala | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ile | Leu | Ser | Ser | Thr | Ala | Val | Leu | Phe | Gly | Gln | Asp | Pro | Leu | Gly | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Thr | Ala | Leu | Leu | Thr | Lys | Asn | Pro | Asn | His | Val | Val | Cys | Thr | Phe | Phe |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu | Asp | Cys | Thr | Met | Glu | Ser | Leu | Phe | Pro | Ala | Leu | Cys | Ala | His | Ala |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Ser | Gln | Asp | Asp | Pro | Leu | Tyr | Val | Leu | Gly | Asn | Ser | Tyr | Cys | Trp | Phe |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Val | Ser | Lys | Leu | His | Ile | Thr | Asp | Pro | Lys | Glu | Ala | Leu | Phe | Lys | Glu |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Lys | Gly | Asp | Leu | Ser | Ile | Gln | Asn | Phe | Arg | Phe | Leu | Ser | Phe | Thr | Asp |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Cys | Ser | Ser | Lys | Glu | Ser | Ser | Pro | Ser | Ile | Ile | His | Gln | Lys | Asn | Gly |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gln | Leu | Ser | Leu | Arg | Asn | Asn | Gly | Ser | Met | Ser | Phe | Cys | Arg | Asn | His |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ala | Glu | Gly | Ser | Gly | Gly | Ala | Ile | Ser | Ala | Asp | Ala | Phe | Ser | Leu | Gln |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| His | Asn | Tyr | Leu | Phe | Thr | Ala | Phe | Glu | Glu | Asn | Ser | Ser | Lys | Gly | Asn |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Gly | Gly | Ala | Ile | Gln | Ala | Gln | Thr | Phe | Ser | Leu | Ser | Arg | Asn | Val | Ser |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Pro | Ile | Ser | Phe | Ala | Arg | Asn | Arg | Ala | Asp | Leu | Asn | Gly | Gly | Ala | Ile |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Cys | Cys | Ser | Asn | Leu | Ile | Cys | Ser | Gly | Asn | Val | Asn | Pro | Leu | Phe | Phe |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Gly | Asn | Ser | Ala | Thr | Asn | Gly | Gly | Ala | Ile | Cys | Cys | Ile | Ser | Asp |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Leu | Asn | Thr | Ser | Glu | Lys | Gly | Ser | Leu | Ser | Leu | Ala | Cys | Asn | Gln | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Thr | Leu | Phe | Ala | Ser | Asn | Ser | Ala | Lys | Glu | Lys | Gly | Gly | Ala | Ile | Tyr |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Lys | His | Met | Val | Leu | Arg | Tyr | Asn | Gly | Pro | Val | Ser | Phe | Ile | Asn |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Asn | Ser | Ala | Lys | Ile | Gly | Gly | Ala | Ile | Ala | Ile | Gln | Ser | Gly | Gly | Ser |

|   |     |     |     |     |
|---|-----|-----|-----|-----|
| 290   |     | 295 |     | 300 |
| Leu Ser Ile Leu Ala Gly Glu Gly Ser Val Leu Phe Gln Asn Asn Ser |     |     |     |     |
| 305   |     | 310 |     | 320 |
| Gln Arg Thr Ser Asp Gln Gly Leu Val Arg Asn Ala Ile Tyr Leu Xaa |     |     |     |     |
|   | 325 |     | 330 | 335 |
| Lys Asp Ala Ile Leu Ser Ser Leu Glu Ala Arg Asn Gly Asp Ile Leu |     |     |     |     |
|   | 340 |     | 345 | 350 |
| Phe Phe Asp Pro Ile Val Gln Glu Ser Ser Ser Lys Glu Ser Pro Leu |     |     |     |     |
|   | 355 |     | 360 | 365 |
| Pro Ser Ser Leu Gln Ala Ser Val Thr Ser Pro Thr Pro Ala Thr Ala |     |     |     |     |
|   | 370 |     | 375 | 380 |
| Ser Pro Leu Val Ile Gln Thr Ser Ala Asn Arg Ser Val Ile Phe Ser |     |     |     |     |
| 385   |     | 390 |     | 400 |
| Ser Glu Arg Leu Ser Glu Glu Glu Lys Thr Pro Asp Asn Leu Thr Ser |     |     |     |     |
|   | 405 |     | 410 | 415 |
| Gln Leu Gln Gln Pro Ile Glu Leu Lys Ser Gly Arg Leu Val Leu Lys |     |     |     |     |
|   | 420 |     | 425 | 430 |
| Asp Arg Ala Val Leu Ser Ala Pro Ser Leu Ser Gln Asp Pro Gln Ala |     |     |     |     |
|   | 435 |     | 440 | 445 |
| Leu Leu Ile Met Glu Ala Gly Thr Ser Leu Lys Thr Ser Ser Asp Leu |     |     |     |     |
|   | 450 |     | 455 | 460 |
| Lys Leu Ala Thr Leu Ser Ile Pro Leu His Ser Leu Asp Thr Glu Lys |     |     |     |     |
| 465   |     | 470 |     | 480 |
| Ser Val Thr Ile His Ala Pro Asn Leu Ser Ile Gln Lys Ile Phe Leu |     |     |     |     |
|   | 485 |     | 490 | 495 |
| Ser Asn Ser Gly Asp Glu Asn Phe Tyr Glu Asn Val Glu Leu Leu Ser |     |     |     |     |
|   | 500 |     | 505 | 510 |
| Lys Glu Gln Asn Asn Ile Pro Leu Leu Thr Leu Pro Lys Glu Gln Ser |     |     |     |     |
|   | 515 |     | 520 | 525 |
| His Leu His Leu Pro Asp Gly Asn Leu Ser Ser His Phe Gly Tyr Gln |     |     |     |     |
|   | 530 |     | 535 | 540 |
| Gly Asp Trp Thr Phe Ser Trp Lys Asp Ser Asp Glu Gly His Ser Leu |     |     |     |     |
| 545   |     | 550 |     | 560 |
| Ile Ala Asn Trp Thr Pro Lys Asn Tyr Val Pro His Pro Glu Arg Gln |     |     |     |     |
|   | 565 |     | 570 | 575 |
| Ser Thr Leu Val Ala Asn Thr Leu Trp Asn Thr Tyr Ser Asp Met Gln |     |     |     |     |
|   | 580 |     | 585 | 590 |
| Ala Val Gln Ser Met Ile Asn Thr Thr Ala His Gly Gly Ala Tyr Leu |     |     |     |     |
|   | 595 |     | 600 | 605 |
| Phe Gly Thr Trp Gly Ser Ala Val Ser Asn Leu Phe Tyr Val His Asp |     |     |     |     |
|   | 610 |     | 615 | 620 |
| Ser Ser Gly Lys Pro Ile Asp Asn Trp His His Arg Ser Leu Gly Tyr |     |     |     |     |
| 625   |     | 630 |     | 640 |
| Leu Phe Gly Ile Ser Thr His Ser Leu Asp Asp His Ser Phe Cys Leu |     |     |     |     |
|   | 645 |     | 650 | 655 |
| Ala Ala Gly Gln Leu Leu Gly Lys Ser Ser Asp Ser Phe Ile Thr Ser |     |     |     |     |
|   | 660 |     | 665 | 670 |
| Thr Glu Thr Thr Ser Tyr Ile Ala Thr Val Gln Ala Gln Leu Ala Thr |     |     |     |     |
|   | 675 |     | 680 | 685 |
| Ser Leu Met Lys Ile Ser Ala Gln Ala Cys Tyr Asn Glu Ser Ile His |     |     |     |     |
|   | 690 |     | 695 | 700 |
| Glu Leu Lys Thr Lys Tyr Arg Ser Phe Ser Lys Glu Gly Phe Gly Ser |     |     |     |     |
| 705   |     | 710 |     | 720 |
| Trp His Ser Val Ala Val Ser Gly Glu Val Cys Ala Ser Ile Pro Ile |     |     |     |     |
|   | 725 |     | 730 | 735 |
| Val Ser Asn Gly Ser Gly Leu Phe Ser Ser Phe Ser Ile Phe Ser Lys |     |     |     |     |
|   | 740 |     | 745 | 750 |

Leu Gln Gly Phe Ser Gly Thr Gln Asp Gly Phe Glu Glu Ser Ser Gly  
           755                          760                          765  
 Glu Ile Arg Ser Phe Ser Ala Ser Ser Phe Arg Asn Ile Ser Leu Pro  
       770                          775                          780  
 Ile Gly Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr Tyr Tyr  
 785                          790                          795                          800  
 Tyr Phe Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val Glu Ser  
                           805                          810                          815  
 Gly Pro Val Val Leu Leu Lys Asn Ala Val Ser Trp Asp Ala Pro Met  
                           820                          825                          830  
 Ala Asn Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn Gln Arg  
                           835                          840                          845  
 Ala Leu His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val Leu Arg  
                           850                          855                          860  
 Gly Gln Ser His Ser Tyr Ser Leu Asp Leu Gly Thr Thr Tyr Arg Phe  
 865                          870                          875                          880

<210> 176

<211> 982

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> (1)...(982)

<223> Xaa = Any Amino Acid

<400> 176

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 Pro Tyr Thr Val Ile Gly Asp Pro Ser Gly Thr Thr Val Phe Ser Ala  
                           20                          25                          30  
 Gly Glu Leu Thr Leu Lys Asn Leu Asp Asn Ser Ile Ala Ala Leu Pro  
                           35                          40                          45  
 Leu Ser Cys Phe Gly Asn Leu Leu Gly Ser Phe Thr Val Leu Gly Arg  
                           50                          55                          60  
 Gly His Ser Leu Thr Phe Glu Asn Ile Arg Thr Ser Thr Asn Gly Ala  
 65                          70                          75                          80  
 Ala Leu Ser Asn Ser Ala Ala Asp Gly Leu Phe Thr Ile Glu Gly Phe  
                           85                          90                          95  
 Lys Glu Leu Ser Phe Ser Asn Cys Asn Ser Leu Leu Ala Val Leu Pro  
                           100                          105                          110  
 Ala Ala Thr Thr Asn Lys Gly Ser Gln Thr Pro Thr Thr Thr Ser Thr  
                           115                          120                          125  
 Pro Ser Asn Gly Thr Ile Tyr Ser Lys Thr Asp Leu Leu Leu Leu Asn  
                           130                          135                          140  
 Asn Glu Lys Phe Ser Phe Tyr Ser Asn Leu Val Ser Gly Asp Gly Gly  
 145                          150                          155                          160  
 Ala Ile Asp Ala Lys Ser Leu Thr Val Gln Gly Ile Ser Lys Leu Cys  
                           165                          170                          175  
 Val Phe Gln Glu Asn Thr Ala Gln Ala Asp Gly Gly Ala Cys Gln Val  
                           180                          185                          190  
 Val Thr Ser Phe Ser Ala Met Ala Asn Glu Ala Pro Ile Ala Phe Val  
                           195                          200                          205  
 Ala Asn Val Ala Gly Val Arg Gly Gly Gly Ile Ala Ala Val Gln Asp  
                           210                          215                          220  
 Gly Gln Gln Gly Val Ser Ser Ser Thr Ser Thr Glu Asp Pro Val Val

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |
| Ser | Phe | Ser | Arg | Asn | Thr | Ala | Val | Glu | Phe | Asp | Gly | Asn | Val | Ala |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |
| Val | Gly | Gly | Gly | Ile | Tyr | Ser | Tyr | Gly | Asn | Val | Ala | Phe | Leu | Asn |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |
| Gly | Lys | Thr | Leu | Phe | Leu | Asn | Asn | Val | Ala | Ser | Pro | Val | Tyr | Ile |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |
| Ala | Lys | Gln | Pro | Thr | Ser | Gly | Gln | Ala | Ser | Asn | Thr | Ser | Asn | Tyr |
|     | 290 |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |
| Gly | Asp | Gly | Gly | Ala | Ile | Phe | Cys | Lys | Asn | Gly | Ala | Gln | Ala | Gly |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |
| Asn | Asn | Ser | Gly | Ser | Val | Ser | Phe | Asp | Gly | Glu | Gly | Val | Val | Phe |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |
| Ser | Ser | Asn | Val | Ala | Ala | Gly | Lys | Gly | Gly | Ala | Ile | Tyr | Ala | Lys |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |
| Leu | Ser | Val | Ala | Asn | Cys | Gly | Pro | Val | Gln | Phe | Leu | Arg | Asn | Ile |
|     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |
| Asn | Asp | Gly | Gly | Ala | Ile | Tyr | Leu | Gly | Glu | Ser | Gly | Glu | Leu | Ser |
| 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ser | Ala | Asp | Tyr | Gly | Asp | Ile | Ile | Phe | Asp | Gly | Asn | Leu | Lys | Arg |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     | 400 |
| Ala | Lys | Glu | Asn | Ala | Asp | Val | Asn | Gly | Val | Thr | Val | Ser | Ser | Gln |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ala | Ile | Ser | Met | Gly | Ser | Gly | Gly | Lys | Ile | Thr | Thr | Leu | Arg | Ala |
|     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     | Lys |
| Ala | Gly | His | Gln | Ile | Leu | Phe | Asn | Asp | Pro | Ile | Glu | Met | Ala | Asn |
|     | 435 |     |     |     |     |     | 440 |     |     |     | 445 |     |     | Gly |
| Asn | Asn | Gln | Pro | Ala | Gln | Ser | Ser | Lys | Leu | Leu | Lys | Ile | Asn | Asp |
| 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     | Gly |
| Glu | Gly | Tyr | Thr | Gly | Asp | Ile | Val | Phe | Ala | Asn | Gly | Ser | Ser | Thr |
| 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Tyr | Gln | Asn | Val | Thr | Ile | Glu | Gln | Gly | Arg | Ile | Val | Leu | Arg | Glu |
|     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 | Lys |
| Ala | Lys | Leu | Ser | Val | Asn | Ser | Leu | Ser | Gln | Thr | Gly | Gly | Ser | Leu |
|     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     | Tyr |
| Met | Glu | Ala | Gly | Ser | Thr | Leu | Asp | Phe | Val | Thr | Pro | Gln | Pro | Gln |
|     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Gln | Pro | Pro | Ala | Ala | Asn | Gln | Leu | Ile | Thr | Leu | Ser | Asn | Leu | His |
| 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     | Leu |
| Ser | Leu | Ser | Ser | Leu | Leu | Ala | Asn | Asn | Ala | Val | Thr | Asn | Pro | Pro |
| 545 |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Asn | Pro | Pro | Ala | Gln | Asp | Ser | His | Pro | Ala | Val | Ile | Gly | Ser | Thr |
|     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 | Thr |
| Ala | Gly | Ser | Val | Thr | Ile | Ser | Gly | Pro | Ile | Phe | Phe | Glu | Asp | Leu |
|     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     | Asp |
| Asp | Thr | Ala | Tyr | Asp | Arg | Tyr | Asp | Trp | Leu | Gly | Ser | Asn | Gln | Lys |
|     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     | Ile |
| Asn | Val | Leu | Lys | Leu | Gln | Leu | Gly | Thr | Lys | Pro | Pro | Ala | Asn | Ala |
| 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     | Pro |
| Ser | Asp | Leu | Thr | Leu | Gly | Asn | Glu | Met | Pro | Lys | Tyr | Gly | Tyr | Gln |
| 625 |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Ser | Trp | Lys | Leu | Ala | Trp | Asp | Pro | Asn | Thr | Ala | Asn | Asn | Gly | Pro |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 | Tyr |
| Thr | Leu | Lys | Ala | Thr | Trp | Thr | Lys | Thr | Gly | Tyr | Asn | Pro | Gly | Pro |
|     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     | Glu |
| Arg | Val | Ala | Ser | Leu | Val | Pro | Asn | Ser | Leu | Trp | Gly | Ser | Ile | Leu |
|     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     | Asp |

Ile Arg Ser Ala His Ser Ala Ile Gln Ala Ser Val Asp Gly Arg Ser  
 690 695 700  
 Tyr Cys Arg Gly Leu Trp Val Ser Gly Val Ser Asn Phe Phe Tyr His  
 705 710 715 720  
 Asp Arg Asp Ala Leu Gly Gln Gly Tyr Arg Tyr Ile Ser Gly Gly Tyr  
 725 730 735  
 Ser Leu Gly Ala Asn Ser Tyr Phe Gly Ser Ser Met Phe Gly Leu Ala  
 740 745 750  
 Phe Thr Glu Val Phe Gly Arg Ser Lys Asp Tyr Val Val Cys Arg Ser  
 755 760 765  
 Asn His His Ala Cys Ile Gly Ser Val Tyr Leu Ser Thr Gln Gln Ala  
 770 775 780  
 Leu Cys Gly Ser Tyr Leu Phe Gly Asp Ala Phe Ile Arg Ala Ser Tyr  
 785 790 795 800  
 Gly Phe Gly Asn Gln His Met Lys Thr Ser Tyr Thr Phe Ala Glu Glu  
 805 810 815  
 Ser Asp Val Arg Trp Asp Asn Asn Cys Leu Ala Gly Glu Ile Gly Ala  
 820 825 830  
 Gly Leu Pro Ile Val Ile Thr Pro Ser Lys Leu Tyr Leu Asn Glu Leu  
 835 840 845  
 Arg Pro Phe Val Gln Ala Glu Phe Ser Tyr Ala Asp His Glu Ser Phe  
 850 855 860  
 Thr Glu Glu Gly Asp Gln Ala Arg Ala Phe Lys Ser Gly His Leu Leu  
 865 870 875 880  
 Asn Leu Ser Val Pro Val Gly Val Lys Phe Asp Arg Cys Ser Ser Thr  
 885 890 895  
 His Pro Asn Lys Tyr Ser Phe Met Ala Ala Tyr Ile Cys Asp Ala Tyr  
 900 905 910  
 Arg Thr Ile Ser Gly Thr Glu Thr Thr Leu Leu Ser His Gln Glu Thr  
 915 920 925  
 Trp Thr Thr Asp Ala Phe His Leu Ala Arg His Gly Val Val Val Arg  
 930 935 940  
 Gly Ser Met Tyr Ala Ser Leu Thr Ser Asn Ile Glu Val Tyr Gly His  
 945 950 955 960  
 Gly Arg Tyr Glu Tyr Arg Asp Ala Ser Arg Gly Tyr Gly Leu Ser Ala  
 965 970 975  
 Gly Ser Lys Val Xaa Phe  
 980

<210> 177  
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 <212> PRT  
 <213> Chlamydia

<400> 177  
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 Pro Asp Pro Thr Lys Glu Ser Leu Ser Asn Lys Ile Ser Leu Thr Gly  
 35 40 45  
 Asp Thr His Asn Leu Thr Asn Cys Tyr Leu Asp Asn Leu Arg Tyr Ile  
 50 55 60  
 Leu Ala Ile Leu Gln Lys Thr Pro Asn Glu Gly Ala Ala Val Thr Ile  
 65 70 75 80  
 Thr Asp Tyr Leu Ser Phe Phe Asp Thr Gln Lys Glu Gly Ile Tyr Phe  
 85 90 95

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Lys | Asn | Leu | Thr | Pro | Glu | Ser | Gly | Gly | Ala | Ile | Gly | Tyr | Ala | Ser |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Asn | Ser | Pro | Thr | Val | Glu | Ile | Arg | Asp | Thr | Ile | Gly | Pro | Val | Ile |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Phe | Glu | Asn | Asn | Thr | Cys | Cys | Arg | Leu | Phe | Thr | Trp | Arg | Asn | Pro | Tyr |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ala | Ala | Asp | Lys | Ile | Arg | Glu | Gly | Gly | Ala | Ile | His | Ala | Gln | Asn | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Tyr | Ile | Asn | His | Asn | His | Asp | Val | Val | Gly | Phe | Met | Lys | Asn | Phe | Ser |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Tyr | Val | Gln | Gly | Gly | Ala | Ile | Ser | Thr | Ala | Asn | Thr | Phe | Val | Val | Ser |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Glu | Asn | Gln | Ser | Cys | Phe | Leu | Phe | Met | Asp | Asn | Ile | Cys | Ile | Gln | Thr |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Asn | Thr | Ala | Gly | Lys | Gly | Gly | Ala | Ile | Tyr | Ala | Gly | Thr | Ser | Asn | Ser |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Phe | Glu | Ser | Asn | Asn | Cys | Asp | Leu | Phe | Phe | Ile | Asn | Asn | Ala | Cys | Cys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ala | Gly | Gly | Ala | Ile | Phe | Ser | Pro | Ile | Cys | Ser | Leu | Thr | Gly | Asn | Arg |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Gly | Asn | Ile | Val | Phe | Tyr | Asn | Asn | Arg | Cys | Phe | Lys | Asn | Val | Glu | Thr |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Ser | Ser | Glu | Ala | Ser | Asp | Gly | Gly | Ala | Ile | Lys | Val | Thr | Thr | Arg |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Leu | Asp | Val | Thr | Gly | Asn | Arg | Gly | Arg | Ile | Phe | Phe | Ser | Asp | Asn | Ile |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Thr | Lys | Asn | Tyr | Gly | Gly | Ala | Ile | Tyr | Ala | Pro | Val | Val | Thr | Leu | Val |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Asp | Asn | Gly | Pro | Thr | Phe | Ile | Asn | Asn | Ile | Ala | Asn | Asn | Lys | Gly |     |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     | 335 |     |     |
| Gly | Ala | Ile | Tyr | Ile | Asp | Gly | Thr | Ser | Asn | Ser | Lys | Ile | Ser | Ala | Asp |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Arg | His | Ala | Ile | Ile | Phe | Asn | Glu | Asn | Ile | Val | Thr | Asn | Val | Thr | Asn |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ala | Asn | Gly | Thr | Ser | Thr | Ser | Ala | Asn | Pro | Pro | Arg | Arg | Asn | Ala | Ile |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Thr | Val | Ala | Ser | Ser | Ser | Gly | Glu | Ile | Leu | Leu | Gly | Ala | Gly | Ser | Ser |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Gln | Asn | Leu | Ile | Phe | Tyr | Asp | Pro | Ile | Glu | Val | Ser | Asn | Ala | Gly | Val |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ser | Val | Ser | Phe | Asn | Lys | Glu | Ala | Asp | Gln | Thr | Gly | Ser | Val | Val | Phe |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     | 430 |     |     |     |
| Ser | Gly | Ala | Thr | Val | Asn | Ser | Ala | Asp | Phe | His | Gln | Arg | Asn | Leu | Gln |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Thr | Lys | Thr | Pro | Ala | Pro | Leu | Thr | Leu | Ser | Asn | Gly | Phe | Leu | Cys | Ile |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Glu | Asp | His | Ala | Gln | Leu | Thr | Val | Asn | Arg | Phe | Thr | Gln | Thr | Gly | Gly |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Val | Val | Ser | Leu | Gly | Asn | Gly | Ala | Val | Leu | Ser | Cys | Tyr | Lys | Asn | Gly |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Thr | Gly | Asp | Ser | Ala | Ser | Asn | Ala | Ser | Ile | Thr | Leu | Lys | His | Ile | Gly |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Leu | Asn | Leu | Ser | Ser | Ile | Leu | Lys | Ser | Gly | Ala | Glu | Ile | Pro | Leu | Leu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Trp | Val | Glu | Pro | Thr | Asn | Asn | Ser | Asn | Asn | Tyr | Thr | Ala | Asp | Thr | Ala |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Ala | Thr | Phe | Ser | Leu | Ser | Asp | Val | Lys | Leu | Ser | Leu | Ile | Asp | Asp | Tyr |

|   |   |     |     |     |  |     |
|---|---|-----|-----|-----|--|-----|
| 545   |   | 550 |     | 555 |  | 560 |
| Gly Asn Ser Pro Tyr   | Glu Ser Thr Asp Leu Thr His Ala Leu Ser Ser |     |     |     |  |     |
|   | 565   |     | 570 |     |  | 575 |
| Gln Pro Met Leu Ser Ile Ser Glu Ala Ser Asp Asn Gln Leu Gln Ser |   |     |     |     |  |     |
|   | 580   |     | 585 |     |  | 590 |
| Glu Asn Ile Asp Phe Ser Gly Leu Asn Val Pro His Tyr Gly Trp Gln |   |     |     |     |  |     |
|   | 595   |     | 600 |     |  | 605 |
| Gly Leu Trp Thr Trp Gly Trp Ala Lys Thr Gln Asp Pro Glu Pro Ala |   |     |     |     |  |     |
|   | 610   |     | 615 |     |  | 620 |
| Ser Ser Ala Thr Ile Thr Asp Pro Gln Lys Ala Asn Arg Phe His Arg |   |     |     |     |  |     |
|   | 625   |     | 630 |     |  | 635 |
| Thr Leu Leu Leu Thr Trp Leu Pro Ala Gly Tyr Val Pro Ser Pro Lys |   |     |     |     |  |     |
|   | 645   |     | 650 |     |  | 655 |
| His Arg Ser Pro Leu Ile Ala Asn Thr Leu Trp Gly Asn Met Leu Leu |   |     |     |     |  |     |
|   | 660   |     | 665 |     |  | 670 |
| Ala Thr Glu Ser Leu Lys Asn Ser Ala Glu Leu Thr Pro Ser Gly His |   |     |     |     |  |     |
|   | 675   |     | 680 |     |  | 685 |
| Pro Phe Trp Gly Ile Thr Gly Gly Gly Leu Gly Met Met Val Tyr Gln |   |     |     |     |  |     |
|   | 690   |     | 695 |     |  | 700 |
| Asp Pro Arg Glu Asn His Pro Gly Phe His Met Arg Ser Ser Gly Tyr |   |     |     |     |  |     |
|   | 705   |     | 710 |     |  | 715 |
| Ser Ala Gly Met Ile Ala Gly Gln Thr His Thr Phe Ser Leu Lys Phe |   |     |     |     |  |     |
|   | 725   |     | 730 |     |  | 735 |
| Ser Gln Thr Tyr Thr Lys Leu Asn Glu Arg Tyr Ala Lys Asn Asn Val |   |     |     |     |  |     |
|   | 740   |     | 745 |     |  | 750 |
| Ser Ser Lys Asn Tyr Ser Cys Gln Gly Glu Met Leu Phe Ser Leu Gln |   |     |     |     |  |     |
|   | 755   |     | 760 |     |  | 765 |
| Glu Gly Phe Leu Leu Thr Lys Leu Val Gly Leu Tyr Ser Tyr Gly Asp |   |     |     |     |  |     |
|   | 770   |     | 775 |     |  | 780 |
| His Asn Cys His His Phe Tyr Thr Gln Gly Glu Asn Leu Thr Ser Gln |   |     |     |     |  |     |
|   | 785   |     | 790 |     |  | 795 |
| Gly Thr Phe Arg Ser Gln Thr Met Gly Gly Ala Val Phe Phe Asp Leu |   |     |     |     |  |     |
|   | 805   |     | 810 |     |  | 815 |
| Pro Met Lys Pro Phe Gly Ser Thr His Ile Leu Thr Ala Pro Phe Leu |   |     |     |     |  |     |
|   | 820   |     | 825 |     |  | 830 |
| Gly Ala Leu Gly Ile Tyr Ser Ser Leu Ser His Phe Thr Glu Val Gly |   |     |     |     |  |     |
|   | 835   |     | 840 |     |  | 845 |
| Ala Tyr Pro Arg Ser Phe Ser Thr Lys Thr Pro Leu Ile Asn Val Leu |   |     |     |     |  |     |
|   | 850   |     | 855 |     |  | 860 |
| Val Pro Ile Gly Val Lys Gly Ser Phe Met Asn Ala Thr His Arg Pro |   |     |     |     |  |     |
|   | 865   |     | 870 |     |  | 875 |
| Gln Ala Trp Thr Val Glu Leu Ala Tyr Gln Pro Val Leu Tyr Arg Gln |   |     |     |     |  |     |
|   | 885   |     | 890 |     |  | 895 |
| Glu Pro Gly Ile Ala Thr Gln Leu Leu Ala Ser Lys Gly Ile Trp Phe |   |     |     |     |  |     |
|   | 900   |     | 905 |     |  | 910 |
| Gly Ser Gly Ser Pro Ser Ser Arg His Ala Met Ser Tyr Lys Ile Ser |   |     |     |     |  |     |
|   | 915   |     | 920 |     |  | 925 |
| Gln Gln Thr Gln Pro Leu Ser Trp Leu Thr Leu His Phe Gln Tyr His |   |     |     |     |  |     |
|   | 930   |     | 935 |     |  | 940 |
| Gly Phe Tyr Ser Ser Ser Thr Phe Cys Asn Tyr Leu Asn Gly Glu Ile |   |     |     |     |  |     |
|   | 945   |     | 950 |     |  | 955 |
| Ala Leu Arg Phe   |   |     |     |     |  | 960 |

<210> 178  
 <211> 1530  
 <212> PRT



&lt;213&gt; Chlamydia

&lt;400&gt; 178

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Ser | Glu | Lys | Asp | Ile | Lys | Ser | Thr | Cys | Ser | Lys | Phe | Ser | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Val | Val | Ala | Ala | Ile | Leu | Ala | Ser | Val | Ser | Gly | Leu | Ala | Ser | Cys |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Asp | Leu | His | Ala | Gly | Gly | Gln | Ser | Val | Asn | Glu | Leu | Val | Tyr | Val |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Pro | Gln | Ala | Val | Leu | Leu | Leu | Asp | Gln | Ile | Arg | Asp | Leu | Phe | Val |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gly | Ser | Lys | Asp | Ser | Gln | Ala | Glu | Gly | Gln | Tyr | Arg | Leu | Ile | Val | Gly |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Asp | Pro | Ser | Ser | Phe | Gln | Glu | Lys | Asp | Ala | Asp | Thr | Leu | Pro | Gly | Lys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Val | Glu | Gln | Ser | Thr | Leu | Phe | Ser | Val | Thr | Asn | Pro | Val | Val | Phe | Gln |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gly | Val | Asp | Gln | Gln | Asp | Gln | Val | Ser | Ser | Gln | Gly | Leu | Ile | Cys | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Phe | Thr | Ser | Ser | Asn | Leu | Asp | Ser | Pro | Arg | Asp | Gly | Glu | Ser | Phe | Leu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gly | Ile | Ala | Phe | Val | Gly | Asp | Ser | Ser | Lys | Ala | Gly | Ile | Thr | Leu | Thr |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Asp | Val | Lys | Ala | Ser | Leu | Ser | Gly | Ala | Ala | Leu | Tyr | Ser | Thr | Glu | Asp |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Leu | Ile | Phe | Glu | Lys | Ile | Lys | Gly | Gly | Leu | Glu | Phe | Ala | Ser | Cys | Ser |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ser | Leu | Glu | Gln | Gly | Gly | Ala | Cys | Ala | Ala | Gln | Ser | Ile | Leu | Ile | His |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Asp | Cys | Gln | Gly | Leu | Gln | Val | Lys | His | Cys | Thr | Thr | Ala | Val | Asn | Ala |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Glu | Gly | Ser | Ser | Ala | Asn | Asp | His | Leu | Gly | Phe | Gly | Gly | Gly | Ala | Phe |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Phe | Val | Thr | Gly | Ser | Leu | Ser | Gly | Glu | Lys | Ser | Leu | Tyr | Met | Pro | Ala |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Gly | Asp | Met | Val | Val | Ala | Asn | Cys | Asp | Gly | Ala | Ile | Ser | Phe | Glu | Gly |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Asn | Ser | Ala | Asn | Phe | Ala | Asn | Gly | Ala | Ile | Ala | Ala | Ser | Gly | Lys |     |
|     | 275 |     |     |     |     |     | 280 |     |     |     | 285 |     |     |     |     |
| Val | Leu | Phe | Val | Ala | Asn | Asp | Lys | Lys | Thr | Ser | Phe | Ile | Glu | Asn | Arg |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ala | Leu | Ser | Gly | Gly | Ala | Ile | Ala | Ala | Ser | Ser | Asp | Ile | Ala | Phe | Gln |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Asn | Cys | Ala | Glu | Leu | Val | Phe | Lys | Gly | Asn | Cys | Ala | Ile | Gly | Thr | Glu |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |
| Asp | Lys | Gly | Ser | Leu | Gly | Gly | Gly | Ala | Ile | Ser | Ser | Leu | Gly | Thr | Val |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Leu | Leu | Gln | Gly | Asn | His | Gly | Ile | Thr | Cys | Asp | Lys | Asn | Glu | Ser | Ala |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ser | Gln | Gly | Gly | Ala | Ile | Phe | Gly | Lys | Asn | Cys | Gln | Ile | Ser | Asp | Asn |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Glu | Gly | Pro | Val | Val | Phe | Arg | Asp | Ser | Thr | Ala | Cys | Leu | Gly | Gly | Gly |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Ala | Ile | Ala | Ala | Gln | Glu | Ile | Val | Ser | Ile | Gln | Asn | Asn | Gln | Ala | Gly |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ile | Ser | Phe | Glu | Gly | Gly | Lys | Ala | Ser | Phe | Gly | Gly | Gly | Ile | Ala | Cys |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Phe | Ser | Ser | Ala | Gly | Gly | Ala | Ser | Val | Leu | Gly | Thr | Ile | Asp |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Ile | Ser | Lys | Asn | Leu | Gly | Ala | Ile | Ser | Phe | Ser | Arg | Thr | Leu | Cys | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Thr | Ser | Asp | Leu | Gly | Gln | Met | Glu | Tyr | Gln | Gly | Gly | Gly | Ala | Leu | Phe |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Gly | Glu | Asn | Ile | Ser | Leu | Ser | Glu | Asn | Ala | Gly | Val | Leu | Thr | Phe | Lys |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Asp | Asn | Ile | Val | Lys | Thr | Phe | Ala | Ser | Asn | Gly | Lys | Ile | Leu | Gly | Gly |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Gly | Ala | Ile | Leu | Ala | Thr | Gly | Lys | Val | Glu | Ile | Thr | Asn | Asn | Ser | Gly |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Gly | Ile | Ser | Phe | Thr | Gly | Asn | Ala | Arg | Ala | Pro | Gln | Ala | Leu | Pro | Thr |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Gln | Glu | Glu | Phe | Pro | Leu | Phe | Ser | Lys | Lys | Glu | Gly | Arg | Pro | Leu | Ser |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Ser | Gly | Tyr | Ser | Gly | Gly | Gly | Ala | Ile | Leu | Gly | Arg | Glu | Val | Ala | Ile |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Leu | His | Asn | Ala | Ala | Val | Val | Phe | Glu | Gln | Asn | Arg | Leu | Gln | Cys | Ser |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Glu | Glu | Glu | Ala | Thr | Leu | Leu | Gly | Cys | Cys | Gly | Gly | Gly | Ala | Val | His |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gly | Met | Asp | Ser | Thr | Ser | Ile | Val | Gly | Asn | Ser | Ser | Val | Arg | Phe | Gly |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Asn | Asn | Tyr | Ala | Met | Gly | Gln | Gly | Val | Ser | Gly | Gly | Ala | Leu | Leu | Ser |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Lys | Thr | Val | Gln | Leu | Ala | Gly | Asn | Gly | Ser | Val | Asp | Phe | Ser | Arg | Asn |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ile | Ala | Ser | Leu | Gly | Gly | Gly | Ala | Leu | Gln | Ala | Ser | Glu | Gly | Asn | Cys |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Glu | Leu | Val | Asp | Asn | Gly | Tyr | Val | Leu | Phe | Arg | Asp | Asn | Arg | Gly | Arg |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Val | Tyr | Gly | Gly | Ala | Ile | Ser | Cys | Leu | Arg | Gly | Asp | Val | Val | Ile | Ser |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Gly | Asn | Lys | Gly | Arg | Val | Glu | Phe | Lys | Asp | Asn | Ile | Ala | Thr | Arg | Leu |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Tyr | Val | Glu | Glu | Thr | Val | Glu | Lys | Val | Glu | Val | Glu | Pro | Ala | Pro |     |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Glu | Gln | Lys | Asp | Asn | Asn | Glu | Leu | Ser | Phe | Leu | Gly | Ser | Val | Glu | Gln |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Ser | Phe | Ile | Thr | Ala | Ala | Asn | Gln | Ala | Leu | Phe | Ala | Ser | Glu | Asp | Gly |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Asp | Leu | Ser | Pro | Glu | Ser | Ser | Ile | Ser | Ser | Glu | Glu | Leu | Ala | Lys | Arg |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Arg | Glu | Cys | Ala | Gly | Gly | Ala | Ile | Phe | Ala | Lys | Arg | Val | Arg | Ile | Val |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |
| Asp | Asn | Gln | Glu | Ala | Val | Val | Phe | Ser | Asn | Asn | Phe | Ser | Asp | Ile | Tyr |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |
| Gly | Gly | Ala | Ile | Phe | Thr | Gly | Ser | Leu | Arg | Glu | Glu | Asp | Lys | Leu | Asp |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Gly | Gln | Ile | Pro | Glu | Val | Leu | Ile | Ser | Gly | Asn | Ala | Gly | Asp | Val | Val |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |
| Phe | Ser | Gly | Asn | Ser | Ser | Lys | Arg | Asp | Glu | His | Leu | Pro | His | Thr | Gly |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |
| Gly | Gly | Ala | Ile | Cys | Thr | Gln | Asn | Leu | Thr | Ile | Ser | Gln | Asn | Thr | Gly |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     | 880 |
| Asn | Val | Leu | Phe | Tyr | Asn | Asn | Val | Ala | Cys | Ser | Gly | Gly | Ala | Val | Arg |

|      |      |      |      |     |      |      |      |      |      |      |      |      |      |      |      |  |  |
|------|------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|--|--|
|      |      |      |      | 885 |      |      |      |      |      | 890  |      |      |      |      | 895  |  |  |
| Ile  | Glu  | Asp  | His  | Gly | Asn  | Val  | Leu  | Leu  | Glu  | Ala  | Phe  | Gly  | Gly  | Asp  | Ile  |  |  |
|      |      |      | 900  |     |      |      |      |      | 905  |      |      |      | 910  |      |      |  |  |
| Val  | Phe  | Lys  | Gly  | Asn | Ser  | Ser  | Phe  | Arg  | Ala  | Gln  | Gly  | Ser  | Asp  | Ala  | Ile  |  |  |
|      |      | 915  |      |     |      |      | 920  |      |      |      |      | 925  |      |      |      |  |  |
| Tyr  | Phe  | Ala  | Gly  | Lys | Glu  | Ser  | His  | Ile  | Thr  | Ala  | Leu  | Asn  | Ala  | Thr  | Glu  |  |  |
|      |      | 930  |      |     |      | 935  |      |      |      |      | 940  |      |      |      |      |  |  |
| Gly  | His  | Ala  | Ile  | Val | Phe  | His  | Asp  | Ala  | Leu  | Val  | Phe  | Glu  | Asn  | Leu  | Lys  |  |  |
| 945  |      |      |      |     | 950  |      |      |      |      | 955  |      |      |      |      | 960  |  |  |
| Glu  | Arg  | Lys  | Ser  | Ala | Glu  | Val  | Leu  | Leu  | Ile  | Asn  | Ser  | Arg  | Glu  | Asn  | Pro  |  |  |
|      |      |      | 965  |     |      |      |      |      | 970  |      |      |      |      | 975  |      |  |  |
| Gly  | Tyr  | Thr  | Gly  | Ser | Ile  | Arg  | Phe  | Leu  | Glu  | Ala  | Glu  | Ser  | Lys  | Val  | Pro  |  |  |
|      |      |      | 980  |     |      |      |      | 985  |      |      |      |      | 990  |      |      |  |  |
| Gln  | Cys  | Ile  | His  | Val | Gln  | Gln  | Gly  | Ser  | Leu  | Glu  | Leu  | Leu  | Asn  | Gly  | Ala  |  |  |
|      |      | 995  |      |     |      |      | 1000 |      |      |      |      | 1005 |      |      |      |  |  |
| Thr  | Leu  | Cys  | Ser  | Tyr | Gly  | Phe  | Lys  | Gln  | Asp  | Ala  | Gly  | Ala  | Lys  | Leu  | Val  |  |  |
|      | 1010 |      |      |     |      | 1015 |      |      |      |      | 1020 |      |      |      |      |  |  |
| Leu  | Ala  | Ala  | Gly  | Ser | Lys  | Leu  | Lys  | Ile  | Leu  | Asp  | Ser  | Gly  | Thr  | Pro  | Val  |  |  |
| 1025 |      |      |      |     | 1030 |      |      |      |      | 1035 |      |      |      |      | 1040 |  |  |
| Gln  | Gly  | His  | Ala  | Ile | Ser  | Lys  | Pro  | Glu  | Ala  | Glu  | Ile  | Glu  | Ser  | Ser  | Ser  |  |  |
|      |      |      | 1045 |     |      |      |      |      | 1050 |      |      |      |      | 1055 |      |  |  |
| Glu  | Pro  | Glu  | Gly  | Ala | His  | Ser  | Leu  | Trp  | Ile  | Ala  | Lys  | Asn  | Ala  | Gln  | Thr  |  |  |
|      |      | 1060 |      |     |      |      |      | 1065 |      |      |      | 1070 |      |      |      |  |  |
| Thr  | Val  | Pro  | Met  | Val | Asp  | Ile  | His  | Thr  | Ile  | Ser  | Val  | Asp  | Leu  | Ala  | Ser  |  |  |
|      |      | 1075 |      |     |      |      | 1080 |      |      |      |      | 1085 |      |      |      |  |  |
| Phe  | Ser  | Ser  | Ser  | Gln | Gln  | Glu  | Gly  | Thr  | Val  | Glu  | Ala  | Pro  | Gln  | Val  | Ile  |  |  |
|      | 1090 |      |      |     |      | 1095 |      |      |      |      | 1100 |      |      |      |      |  |  |
| Val  | Pro  | Gly  | Gly  | Ser | Tyr  | Val  | Arg  | Ser  | Gly  | Glu  | Leu  | Asn  | Leu  | Glu  | Leu  |  |  |
| 1105 |      |      |      |     | 1110 |      |      |      |      | 1115 |      |      |      |      | 1120 |  |  |
| Val  | Asn  | Thr  | Thr  | Gly | Thr  | Gly  | Tyr  | Glu  | Asn  | His  | Ala  | Leu  | Leu  | Lys  | Asn  |  |  |
|      |      |      | 1125 |     |      |      |      |      | 1130 |      |      |      |      | 1135 |      |  |  |
| Glu  | Ala  | Lys  | Val  | Pro | Leu  | Met  | Ser  | Phe  | Val  | Ala  | Ser  | Ser  | Asp  | Glu  | Ala  |  |  |
|      |      |      | 1140 |     |      |      |      | 1145 |      |      |      |      | 1150 |      |      |  |  |
| Ser  | Ala  | Glu  | Ile  | Ser | Asn  | Leu  | Ser  | Val  | Ser  | Asp  | Leu  | Gln  | Ile  | His  | Val  |  |  |
|      |      | 1155 |      |     |      |      | 1160 |      |      |      |      | 1165 |      |      |      |  |  |
| Ala  | Thr  | Pro  | Glu  | Ile | Glu  | Glu  | Asp  | Thr  | Tyr  | Gly  | His  | Met  | Gly  | Asp  | Trp  |  |  |
|      | 1170 |      |      |     |      | 1175 |      |      |      |      | 1180 |      |      |      |      |  |  |
| Ser  | Glu  | Ala  | Lys  | Ile | Gln  | Asp  | Gly  | Thr  | Leu  | Val  | Ile  | Asn  | Trp  | Asn  | Pro  |  |  |
| 1185 |      |      |      |     | 1190 |      |      |      |      | 1195 |      |      |      |      | 1200 |  |  |
| Thr  | Gly  | Tyr  | Arg  | Leu | Asp  | Pro  | Gln  | Lys  | Ala  | Gly  | Ala  | Leu  | Val  | Phe  | Asn  |  |  |
|      |      |      | 1205 |     |      |      |      |      | 1210 |      |      |      |      | 1215 |      |  |  |
| Ala  | Leu  | Trp  | Glu  | Glu | Gly  | Ala  | Val  | Leu  | Ser  | Ala  | Leu  | Lys  | Asn  | Ala  | Arg  |  |  |
|      |      |      |      |     |      |      |      |      |      |      |      |      |      |      |      |  |  |

Asp Met Lys Thr Arg Tyr Gly Val Leu Gly Glu Ser Ser Ala Ser Trp  
 1345 1350 1355 1360  
 Thr Ser Arg Gly Val Leu Ala Asp Ala Leu Val Glu Tyr Arg Ser Leu  
 1365 1370 1375  
 Val Gly Pro Val Arg Pro Thr Phe Tyr Ala Leu His Phe Asn Pro Tyr  
 1380 1385 1390  
 Val Glu Val Ser Tyr Ala Ser Met Lys Phe Pro Gly Phe Thr Glu Gln  
 1395 1400 1405  
 Gly Arg Glu Ala Arg Ser Phe Glu Asp Ala Ser Leu Thr Asn Ile Thr  
 1410 1415 1420  
 Ile Pro Leu Gly Met Lys Phe Glu Leu Ala Phe Ile Lys Gly Gln Phe  
 1425 1430 1435 1440  
 Ser Glu Val Asn Ser Leu Gly Ile Ser Tyr Ala Trp Glu Ala Tyr Arg  
 1445 1450 1455  
 Lys Val Glu Gly Gly Ala Val Gln Leu Leu Glu Ala Gly Phe Asp Trp  
 1460 1465 1470  
 Glu Gly Ala Pro Met Asp Leu Pro Arg Gln Glu Leu Arg Val Ala Leu  
 1475 1480 1485  
 Glu Asn Asn Thr Glu Trp Ser Ser Tyr Phe Ser Thr Val Leu Gly Leu  
 1490 1495 1500  
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 Glu Ala Asn Thr Gly Leu Arg Leu Ile Phe  
 1525 1530

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 <212> PRT  
 <213> Chlamydia

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 20 25 30  
 Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln Ala Phe Thr  
 35 40 45  
 Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser Val  
 50 55 60  
 Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg Lys His Leu  
 65 70 75 80  
 Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser Ser  
 85 90 95  
 Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala Pro Ser Ser  
 100 105 110  
 Gly Glu Thr Asp Lys Lys Thr Glu Glu Leu Asp Asn Gly Gly Ile  
 115 120 125  
 Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln Asp Ser Leu  
 130 135 140  
 Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe Phe Gly Glu  
 145 150 155 160  
 Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly Ala  
 165 170 175  
 Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu Leu  
 180 185 190  
 Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val Tyr Ala Lys  
 195 200 205

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Arg | Val | Ser | Leu | Glu | Asn | Val | Thr | Glu | Ala | Thr | Phe | Ser | Ser | Asn |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Gly | Gly | Glu | Gln | Gly | Gly | Gly | Gly | Ile | Tyr | Ser | Glu | Gln | Asp | Met | Leu |
| 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     |     | 240 |
| Ile | Ser | Asp | Cys | Asn | Asn | Val | His | Phe | Gln | Gly | Asn | Ala | Ala | Gly | Ala |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Thr | Ala | Val | Lys | Gln | Cys | Leu | Asp | Glu | Glu | Met | Ile | Val | Leu | Leu | Thr |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Glu | Cys | Val | Asp | Ser | Leu | Ser | Glu | Asp | Thr | Leu | Asp | Ser | Thr | Pro | Glu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Glu | Gln | Thr | Lys | Ser | Asn | Gly | Asn | Gln | Asp | Gly | Ser | Ser | Glu | Thr |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Lys | Asp | Thr | Gln | Val | Ser | Glu | Ser | Pro | Glu | Ser | Thr | Pro | Ser | Pro | Asp |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Asp | Val | Leu | Gly | Lys | Gly | Gly | Gly | Ile | Tyr | Thr | Glu | Lys | Ser | Leu | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ile | Thr | Gly | Ile | Thr | Gly | Thr | Ile | Asp | Phe | Val | Ser | Asn | Ile | Ala | Thr |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Asp | Ser | Gly | Ala | Gly | Val | Phe | Thr | Lys | Glu | Asn | Leu | Ser | Cys | Thr | Asn |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Thr | Asn | Ser | Leu | Gln | Phe | Leu | Lys | Asn | Ser | Ala | Gly | Gln | His | Gly | Gly |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gly | Ala | Tyr | Val | Thr | Gln | Thr | Met | Ser | Val | Thr | Asn | Thr | Thr | Ser | Glu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Ser | Ile | Thr | Thr | Pro | Pro | Leu | Val | Gly | Glu | Val | Ile | Phe | Ser | Glu | Asn |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Thr | Ala | Lys | Gly | His | Gly | Gly | Gly | Ile | Cys | Thr | Asn | Lys | Leu | Ser | Leu |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Ser | Asn | Leu | Lys | Thr | Val | Thr | Leu | Thr | Lys | Asn | Ser | Ala | Lys | Glu | Ser |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Gly | Gly | Ala | Ile | Phe | Thr | Asp | Leu | Ala | Ser | Ile | Pro | Thr | Thr | Asp | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Pro | Glu | Ser | Ser | Thr | Pro | Ser | Ser | Ser | Ser | Pro | Ala | Ser | Thr | Pro | Glu |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Val | Val | Ala | Ser | Ala | Lys | Ile | Asn | Arg | Phe | Phe | Ala | Ser | Thr | Ala | Glu |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Pro | Ala | Ala | Pro | Ser | Leu | Thr | Glu | Ala | Glu | Ser | Asp | Gln | Thr | Asp | Gln |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Thr | Glu | Thr | Ser | Asp | Thr | Asn | Ser | Asp | Ile | Asp | Val | Ser | Ile | Glu | Asn |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Leu | Asn | Val | Ala | Ile | Asn | Gln | Asn | Thr | Ser | Ala | Lys | Lys | Gly | Gly |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Ala | Ile | Tyr | Gly | Lys | Lys | Ala | Lys | Leu | Ser | Arg | Ile | Asn | Asn | Leu | Glu |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Leu | Ser | Gly | Asn | Ser | Ser | Gln | Asp | Val | Gly | Gly | Gly | Leu | Cys | Leu | Thr |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Glu | Ser | Val | Glu | Phe | Asp | Ala | Ile | Gly | Ser | Leu | Leu | Ser | His | Tyr | Asn |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Ser | Ala | Ala | Lys | Glu | Gly | Gly | Val | Ile | His | Ser | Lys | Thr | Val | Thr | Leu |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Ser | Asn | Leu | Lys | Ser | Thr | Phe | Thr | Phe | Ala | Asp | Asn | Thr | Val | Lys | Ala |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Ile | Val | Glu | Ser | Thr | Pro | Glu | Ala | Pro | Glu | Glu | Ile | Pro | Pro | Val | Glu |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gly | Glu | Glu | Ser | Thr | Ala | Thr | Glu | Asn | Pro | Asn | Ser | Asn | Thr | Glu | Gly |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ser | Ser | Ala | Asn | Thr | Asn | Leu | Glu | Gly | Ser | Gln | Gly | Asp | Thr | Ala | Asp |

[illegible]

Gly Thr Ser Thr Phe Cys Ser Ile Ala Gly Asp Val Lys Leu Thr Met  
 1125 1130 1135  
 Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp Ala Ile Arg Thr  
 1140 1145 1150  
 Ser Thr Lys Lys Thr Gly Thr Gln Ala Thr Ala Tyr Asp Thr Leu Asp  
 1155 1160 1165  
 Ile Asn Lys Ser Glu Asp Ser Glu Thr Val Asn Ser Ala Phe Thr Gly  
 1170 1175 1180  
 Thr Ile Leu Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro  
 1185 1190 1195 1200  
 Gln Asn Val Val Leu His Ser Gly Ser Leu Val Leu Lys Pro Asn Thr  
 1205 1210 1215  
 Glu Leu His Val Ile Ser Phe Glu Gln Lys Glu Gly Ser Ser Leu Val  
 1220 1225 1230  
 Met Thr Pro Gly Ser Val Leu Ser Asn Gln Thr Val Ala Asp Gly Ala  
 1235 1240 1245  
 Leu Val Ile Asn Asn Met Thr Ile Asp Leu Ser Ser Val Glu Lys Asn  
 1250 1255 1260  
 Gly Ile Ala Glu Gly Asn Ile Phe Thr Pro Pro Glu Leu Arg Ile Ile  
 1265 1270 1275 1280  
 Asp Thr Thr Thr Ser Gly Ser Gly Gly Thr Pro Ser Thr Asp Ser Glu  
 1285 1290 1295  
 Ser Asn Gln Asn Ser Asp Asp Thr Lys Glu Gln Asn Asn Asn Asp Ala  
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 Ser Asn Gln Gly Glu Ser Ala Asn Gly Ser Ser Ser Pro Ala Val Ala  
 1315 1320 1325  
 Ala Ala His Thr Ser Arg Thr Arg Asn Phe Ala Ala Ala Thr Ala  
 1330 1335 1340  
 Thr Pro Thr Thr Thr Pro Thr Ala Thr Thr Thr Ser Asn Gln Val  
 1345 1350 1355 1360  
 Ile Leu Gly Gly Glu Ile Lys Leu Ile Asp Pro Asn Gly Thr Phe Phe  
 1365 1370 1375  
 Gln Asn Pro Ala Leu Arg Ser Asp Gln Gln Ile Ser Leu Leu Val Leu  
 1380 1385 1390  
 Pro Thr Asp Ser Ser Lys Met Gln Ala Gln Lys Ile Val Leu Thr Gly  
 1395 1400 1405  
 Asp Ile Ala Pro Gln Lys Gly Tyr Thr Gly Thr Leu Thr Leu Asp Pro  
 1410 1415 1420  
 Asp Gln Leu Gln Asn Gly Thr Ile Ser Ala Leu Trp Lys Phe Asp Ser  
 1425 1430 1435 1440  
 Tyr Arg Gln Trp Ala Tyr Val Pro Arg Asp Asn His Phe Tyr Ala Asn  
 1445 1450 1455  
 Ser Ile Leu Gly Ser Gln Met Ser Met Val Thr Val Lys Gln Gly Leu  
 1460 1465 1470  
 Leu Asn Asp Lys Met Asn Leu Ala Arg Phe Asp Glu Val Ser Tyr Asn  
 1475 1480 1485  
 Asn Leu Trp Ile Ser Gly Leu Gly Thr Met Leu Ser Gln Val Gly Thr  
 1490 1495 1500  
 Pro Thr Ser Glu Glu Phe Thr Tyr Tyr Ser Arg Gly Ala Ser Val Ala  
 1505 1510 1515 1520  
 Leu Asp Ala Lys Pro Ala His Asp Val Ile Val Gly Ala Ala Phe Ser  
 1525 1530 1535  
 Lys Met Ile Gly Lys Thr Lys Ser Leu Lys Arg Glu Asn Asn Tyr Thr  
 1540 1545 1550  
 His Lys Gly Ser Glu Tyr Ser Tyr Gln Ala Ser Val Tyr Gly Gly Lys  
 1555 1560 1565  
 Pro Phe His Phe Val Ile Asn Lys Lys Thr Glu Lys Ser Leu Pro Leu

|                     |   |      |
|---------------------|---|------|
| 1570                | 1575  | 1580 |
| Leu Leu Gln Gly Val | Ile Ser Tyr Gly Tyr Ile Lys His Asp Thr Val |      |
| 1585                | 1590  | 1595 |
| Thr His Tyr Pro Thr | Ile Arg Glu Arg Asn Gln Gly Glu Trp Glu Asp | 1600 |
|                     | 1605  | 1610 |
| Leu Gly Trp Leu Thr | Ala Leu Arg Val Ser Ser Val Leu Arg Thr Pro | 1615 |
|                     | 1620  | 1625 |
| Ala Gln Gly Asp Thr | Lys Arg Ile Thr Val Tyr Gly Glu Leu Glu Tyr | 1630 |
|                     | 1635  | 1640 |
| Ser Ser Ile Arg Gln | Lys Gln Phe Thr Glu Thr Glu Tyr Asp Pro Arg | 1645 |
|                     | 1650  | 1655 |
| Tyr Phe Asp Asn Cys | Thr Tyr Arg Asn Leu Ala Ile Pro Met Gly Leu | 1660 |
|                     | 1665  | 1670 |
| Ala Phe Glu Gly Glu | Leu Ser Gly Asn Asp Ile Leu Met Tyr Asn Arg | 1675 |
|                     | 1685  | 1690 |
| Phe Ser Val Ala Tyr | Met Pro Ser Ile Tyr Arg Asn Ser Pro Thr Cys | 1695 |
|                     | 1700  | 1705 |
| Lys Tyr Gln Val Leu | Ser Ser Gly Glu Gly Glu Ile Ile Cys Gly     | 1710 |
|                     | 1715  | 1720 |
| Val Pro Thr Arg Asn | Ser Ala Arg Gly Glu Tyr Ser Thr Gln Leu Tyr | 1725 |
|                     | 1730  | 1735 |
| Pro Gly Pro Leu Trp | Thr Leu Tyr Gly Ser Tyr Thr Ile Glu Ala Asp | 1740 |
|                     | 1745  | 1750 |
| Ala His Thr Leu Ala | His Met Met Asn Cys Gly Ala Arg Met Thr Phe | 1755 |
|                     | 1765  | 1770 |
|                     |   | 1775 |

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 <212> PRT  
 <213> Chlamydia

|   |
|---|
| <400> 180   |
| Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ser |
| 1 5 10 15   |
| Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn Phe Ser Arg |
| 20 25 30  |
| Val Glu Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Ile Gly Glu Ala |
| 35 40 45  |
| Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr Lys Phe Thr |
| 50 55 60  |
| Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser Asn Ser Ser |
| 65 70 75 80   |
| Ser Ser Ser Gly Glu Thr Ala Ser Val Ser Glu Asp Ser Asp Ser Thr |
| 85 90 95  |
| Thr Thr Thr Pro Asp Pro Lys Gly Gly Glu Ala Phe Tyr Asn Ala His |
| 100 105 110   |
| Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu Gly Ser Leu |
| 115 120 125   |
| Thr Leu Ser Glu Ile Lys Met Thr Gly Glu Gly Gly Ala Ile Phe Ser |
| 130 135 140   |
| Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Ser Leu Thr Ile Gln Asn |
| 145 150 155 160   |
| Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Gly Ser Thr Ile |
| 165 170 175   |
| Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Cys Asn Ser Ala Glu |
| 180 185 190   |
| Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala Gln Thr Ala |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
|     |     | 195 |     |     |     |     |     | 200 |     |     |     |     |     | 205 |     |  |  |  |
| Ser | Glu | Thr | Ser | Gly | Ser | Ser | Ser | Ser | Ser | Gly | Asn | Asp | Ser | Val | Ser |  |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |  |
| Ser | Pro | Ser | Ser | Ser | Arg | Ala | Glu | Pro | Ala | Ala | Ala | Asn | Leu | Gln | Ser |  |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |
| His | Phe | Ile | Cys | Ala | Thr | Ala | Thr | Pro | Ala | Ala | Gln | Thr | Asp | Thr | Glu |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |  |
| Thr | Ser | Thr | Pro | Ser | His | Lys | Pro | Gly | Ser | Gly | Gly | Ala | Ile | Tyr | Ala |  |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |  |
| Lys | Gly | Asp | Leu | Thr | Ile | Ala | Asp | Ser | Gln | Glu | Val | Leu | Phe | Ser | Ile |  |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |  |
| Asn | Lys | Ala | Thr | Lys | Asp | Gly | Gly | Ala | Ile | Phe | Ala | Glu | Lys | Asp | Val |  |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |  |
| Ser | Phe | Glu | Asn | Ile | Thr | Ser | Leu | Lys | Val | Gln | Thr | Asn | Gly | Ala | Glu |  |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |  |
| Glu | Lys | Gly | Gly | Ala | Ile | Tyr | Ala | Lys | Gly | Asp | Leu | Ser | Ile | Gln | Ser |  |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |  |
| Ser | Lys | Gln | Ser | Leu | Phe | Asn | Ser | Asn | Tyr | Ser | Lys | Gln | Gly | Gly | Gly |  |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |  |
| Ala | Leu | Tyr | Val | Glu | Gly | Gly | Ile | Asn | Phe | Gln | Asp | Leu | Glu | Glu | Ile |  |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |  |
| Arg | Ile | Lys | Tyr | Asn | Lys | Ala | Gly | Thr | Phe | Glu | Thr | Lys | Lys | Ile | Thr |  |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |  |
| Leu | Pro | Ser | Leu | Lys | Ala | Gln | Ala | Ser | Ala | Gly | Asn | Ala | Asp | Ala | Trp |  |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |  |
| Ala | Ser | Ser | Ser | Pro | Gln | Ser | Gly | Ser | Gly | Ala | Thr | Thr | Val | Ser | Asp |  |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |  |
| Ser | Gly | Asp | Ser | Ser | Ser | Gly | Ser | Asp | Ser | Asp | Thr | Ser | Glu | Thr | Val |  |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |  |
| Pro | Val | Thr | Ala | Lys | Gly | Gly | Gly | Leu | Tyr | Thr | Asp | Lys | Asn | Leu | Ser |  |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |  |
| Ile | Thr | Asn | Ile | Thr | Gly | Ile | Ile | Glu | Ile | Ala | Asn | Asn | Lys | Ala | Thr |  |  |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |  |  |
| Asp | Val | Gly | Gly | Gly | Ala | Tyr | Val | Lys | Gly | Thr | Leu | Thr | Cys | Glu | Asn |  |  |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |  |  |
| Ser | His | Arg | Leu | Gln | Phe | Leu | Lys | Asn | Ser | Ser | Asp | Lys | Gln | Gly | Gly |  |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |  |  |
| Gly | Ile | Tyr | Gly | Glu | Asp | Asn | Ile | Thr | Leu | Ser | Asn | Leu | Thr | Gly | Lys |  |  |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |  |  |
| Thr | Leu | Phe | Gln | Glu | Asn | Thr | Ala | Lys | Glu | Glu | Gly | Gly | Gly | Leu | Phe |  |  |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |  |
| Ile | Lys | Gly | Thr | Asp | Lys | Ala | Leu | Thr | Met | Thr | Gly | Leu | Asp | Ser | Phe |  |  |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |  |
| Cys | Leu | Ile | Asn | Asn | Thr | Ser | Glu | Lys | His | Gly | Gly | Gly | Ala | Phe | Val |  |  |  |
| 545 |     |     |     |     | 550 |     |     |     |     |     |     |     |     |     |     |  |  |  |

|      |      |      |      |      |     |      |      |      |      |     |      |      |      |      |      |  |  |
|------|------|------|------|------|-----|------|------|------|------|-----|------|------|------|------|------|--|--|
| Pro  | Val  | Ser  | Thr  | Ala  | Leu | Ser  | Thr  | Pro  | Ser  | Ser | Ser  | Thr  | Val  | Ser  | Ser  |  |  |
|      |      |      | 660  |      |     |      |      | 665  |      |     |      |      | 670  |      |      |  |  |
| Leu  | Thr  | Leu  | Leu  | Ala  | Ala | Ser  | Ser  | Gln  | Ala  | Ser | Pro  | Ala  | Thr  | Ser  | Asn  |  |  |
|      |      | 675  |      |      |     |      | 680  |      |      |     |      | 685  |      |      |      |  |  |
| Lys  | Glu  | Thr  | Gln  | Asp  | Pro | Asn  | Ala  | Asp  | Thr  | Asp | Leu  | Leu  | Ile  | Asp  | Tyr  |  |  |
|      | 690  |      |      |      |     | 695  |      |      |      |     | 700  |      |      |      |      |  |  |
| Val  | Val  | Asp  | Thr  | Thr  | Ile | Ser  | Lys  | Asn  | Thr  | Ala | Lys  | Lys  | Gly  | Gly  | Gly  |  |  |
| 705  |      |      |      |      | 710 |      |      |      |      | 715 |      |      |      |      | 720  |  |  |
| Ile  | Tyr  | Ala  | Lys  | Lys  | Ala | Lys  | Met  | Ser  | Arg  | Ile | Asp  | Gln  | Leu  | Asn  | Ile  |  |  |
|      |      |      | 725  |      |     |      |      |      | 730  |     |      |      |      | 735  |      |  |  |
| Ser  | Glu  | Asn  | Ser  | Ala  | Thr | Glu  | Ile  | Gly  | Gly  | Gly | Ile  | Cys  | Cys  | Lys  | Glu  |  |  |
|      |      |      | 740  |      |     |      |      | 745  |      |     |      |      | 750  |      |      |  |  |
| Ser  | Leu  | Glu  | Leu  | Asp  | Ala | Leu  | Val  | Ser  | Leu  | Ser | Val  | Thr  | Glu  | Asn  | Leu  |  |  |
|      |      | 755  |      |      |     |      | 760  |      |      |     |      | 765  |      |      |      |  |  |
| Val  | Gly  | Lys  | Glu  | Gly  | Gly | Gly  | Leu  | His  | Ala  | Lys | Thr  | Val  | Asn  | Ile  | Ser  |  |  |
|      | 770  |      |      |      |     | 775  |      |      |      |     | 780  |      |      |      |      |  |  |
| Asn  | Leu  | Lys  | Ser  | Gly  | Phe | Ser  | Phe  | Ser  | Asn  | Asn | Lys  | Ala  | Asn  | Ser  | Ser  |  |  |
| 785  |      |      |      | 790  |     |      |      |      | 795  |     |      |      |      |      | 800  |  |  |
| Ser  | Thr  | Gly  | Val  | Ala  | Thr | Thr  | Ala  | Ser  | Ala  | Pro | Ala  | Ala  | Ala  | Ala  | Ala  |  |  |
|      |      |      | 805  |      |     |      |      | 810  |      |     |      |      |      | 815  |      |  |  |
| Ser  | Leu  | Gln  | Ala  | Ala  | Ala | Ala  | Ala  | Ala  | Pro  | Ser | Ser  | Pro  | Ala  | Thr  | Pro  |  |  |
|      |      | 820  |      |      |     |      |      | 825  |      |     |      |      | 830  |      |      |  |  |
| Thr  | Tyr  | Ser  | Gly  | Val  | Val | Gly  | Gly  | Ala  | Ile  | Tyr | Gly  | Glu  | Lys  | Val  | Thr  |  |  |
|      |      | 835  |      |      |     | 840  |      |      |      |     |      | 845  |      |      |      |  |  |
| Phe  | Ser  | Gln  | Cys  | Ser  | Gly | Thr  | Cys  | Gln  | Phe  | Ser | Gly  | Asn  | Gln  | Ala  | Ile  |  |  |
|      | 850  |      |      |      | 855 |      |      |      |      |     | 860  |      |      |      |      |  |  |
| Asp  | Asn  | Asn  | Pro  | Ser  | Gln | Ser  | Ser  | Leu  | Asn  | Val | Gln  | Gly  | Gly  | Ala  | Ile  |  |  |
| 865  |      |      |      | 870  |     |      |      |      | 875  |     |      |      |      |      | 880  |  |  |
| Tyr  | Ala  | Lys  | Thr  | Ser  | Leu | Ser  | Ile  | Gly  | Ser  | Ser | Asp  | Ala  | Gly  | Thr  | Ser  |  |  |
|      |      |      | 885  |      |     |      |      | 890  |      |     |      |      |      | 895  |      |  |  |
| Tyr  | Ile  | Phe  | Ser  | Gly  | Asn | Ser  | Val  | Ser  | Thr  | Gly | Lys  | Ser  | Gln  | Thr  | Thr  |  |  |
|      |      | 900  |      |      |     |      | 905  |      |      |     |      |      | 910  |      |      |  |  |
| Gly  | Gln  | Ile  | Ala  | Gly  | Gly | Ala  | Ile  | Tyr  | Ser  | Pro | Thr  | Val  | Thr  | Leu  | Asn  |  |  |
|      |      | 915  |      |      |     | 920  |      |      |      |     |      | 925  |      |      |      |  |  |
| Cys  | Pro  | Ala  | Thr  | Phe  | Ser | Asn  | Asn  | Thr  | Ala  | Ser | Ile  | Ala  | Thr  | Pro  | Lys  |  |  |
|      | 930  |      |      |      |     | 935  |      |      |      |     | 940  |      |      |      |      |  |  |
| Thr  | Ser  | Ser  | Glu  | Asp  | Gly | Ser  | Ser  | Gly  | Asn  | Ser | Ile  | Lys  | Asp  | Thr  | Ile  |  |  |
| 945  |      |      |      | 950  |     |      |      |      | 955  |     |      |      |      |      | 960  |  |  |
| Gly  | Gly  | Ala  | Ile  | Ala  | Gly | Thr  | Ala  | Ile  | Thr  | Leu | Ser  | Gly  | Val  | Ser  | Arg  |  |  |
|      |      |      | 965  |      |     |      |      | 970  |      |     |      |      |      | 975  |      |  |  |
| Phe  | Ser  | Gly  | Asn  | Thr  | Ala | Asp  | Leu  | Gly  | Ala  | Ala | Ile  | Gly  | Thr  | Leu  | Ala  |  |  |
|      |      |      | 980  |      |     |      | 985  |      |      |     |      |      | 990  |      |      |  |  |
| Asn  | Ala  | Asn  | Thr  | Pro  | Ser | Ala  | Thr  | Ser  | Gly  | Ser | Gln  | Asn  | Ser  | Ile  | Thr  |  |  |
|      |      | 995  |      |      |     |      | 1000 |      |      |     |      | 1005 |      |      |      |  |  |
| Glu  | Lys  | Ile  | Thr  | Leu  | Glu | Asn  | Gly  | Ser  | Phe  | Ile | Phe  | Glu  | Arg  | Asn  | Gln  |  |  |
|      | 1010 |      |      |      |     | 1015 |      |      |      |     | 1020 |      |      |      |      |  |  |
| Ala  | Asn  | Lys  | Arg  | Gly  | Ala | Ile  | Tyr  | Ser  | Pro  | Ser | Val  | Ser  | Ile  | Lys  | Gly  |  |  |
| 1025 |      |      |      | 1030 |     |      |      |      | 1035 |     |      |      |      |      | 1040 |  |  |
| Asn  | Asn  | Ile  | Thr  | Phe  | Asn | Gln  | Asn  | Thr  | Ser  | Thr | His  | Asp  | Gly  | Ser  | Ala  |  |  |
|      |      |      | 1045 |      |     |      |      | 1050 |      |     |      |      |      | 1055 |      |  |  |
| Ile  | Tyr  | Phe  | Thr  | Lys  | Asp | Ala  | Thr  | Ile  | Glu  | Ser | Leu  | Gly  | Ser  | Val  | Leu  |  |  |
|      |      | 1060 |      |      |     |      | 1065 |      |      |     |      |      | 1070 |      |      |  |  |
| Phe  | Thr  | Gly  | Asn  | Asn  | Val | Thr  | Ala  | Thr  | Gln  | Ala | Ser  | Ser  | Ala  | Thr  | Ser  |  |  |
|      |      | 1075 |      |      |     | 1080 |      |      |      |     |      | 1085 |      |      |      |  |  |
| Gly  | Gln  | Asn  | Thr  | Asn  | Thr | Ala  | Asn  | Tyr  | Gly  | Ala | Ala  | Ile  | Phe  | Gly  | Asp  |  |  |
|      | 1090 |      |      |      |     | 1095 |      |      |      |     | 1100 |      |      |      |      |  |  |
| Pro  | Gly  | Thr  | Thr  | Gln  | Ser | Ser  | Gln  | Thr  | Asp  | Ala | Ile  | Leu  | Thr  | Leu  | Leu  |  |  |

|   |      |      |      |
|---|------|------|------|
| 1105  | 1110 | 1115 | 1120 |
| Ala Ser Ser Gly Asn Ile Thr Phe Ser Asn Asn Ser Leu Gln Asn Asn |      |      |      |
|   | 1125 | 1130 | 1135 |
| Gln Gly Asp Thr Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val |      |      |      |
|   | 1140 | 1145 | 1150 |
| Lys Leu Ser Leu Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp |      |      |      |
|   | 1155 | 1160 | 1165 |
| Cys Val His Thr Ser Thr Lys Lys Thr Gly Ser Thr Gln Asn Val Tyr |      |      |      |
|   | 1170 | 1175 | 1180 |
| Glu Thr Leu Asp Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly |      |      |      |
| 1185  | 1190 | 1195 | 1200 |
| Thr Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro |      |      |      |
|   | 1205 | 1210 | 1215 |
| Gln Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr |      |      |      |
|   | 1220 | 1225 | 1230 |
| Glu Leu His Val Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile |      |      |      |
|   | 1235 | 1240 | 1245 |
| Met Glu Pro Gly Ala Val Leu Ser Asn Gln Asn Ile Ala Asn Gly Ala |      |      |      |
|   | 1250 | 1255 | 1260 |
| Leu Ala Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser Met Gly Thr Pro |      |      |      |
| 1265  | 1270 | 1275 | 1280 |
| Gln Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr |      |      |      |
|   | 1285 | 1290 | 1295 |
| Thr Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr |      |      |      |
|   | 1300 | 1305 | 1310 |
| Asn Pro Lys Arg Ile Ser Ala Ala Val Pro Ser Gly Ser Ala Ala Thr |      |      |      |
|   | 1315 | 1320 | 1325 |
| Thr Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr |      |      |      |
|   | 1330 | 1335 | 1340 |
| Leu Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser |      |      |      |
| 1345  | 1350 | 1355 | 1360 |
| Asp Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val |      |      |      |
|   | 1365 | 1370 | 1375 |
| Gln Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly |      |      |      |
|   | 1380 | 1385 | 1390 |
| Tyr Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu |      |      |      |
|   | 1395 | 1400 | 1405 |
| Gln Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro |      |      |      |
|   | 1410 | 1415 | 1420 |
| Arg Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Asn Ser |      |      |      |
| 1425  | 1430 | 1435 | 1440 |
| Met Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met Leu Asn Asn Ala |      |      |      |
|   | 1445 | 1450 | 1455 |
| Arg Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly |      |      |      |
|   | 1460 | 1465 | 1470 |
| Thr Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr |      |      |      |
|   | 1475 | 1480 | 1485 |
| Tyr Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp |      |      |      |
|   | 1490 | 1495 | 1500 |
| Phe Ile Leu Gly Ala Ala Phe Ser Lys Ile Val Gly Lys Thr Lys Ala |      |      |      |
| 1505  | 1510 | 1515 | 1520 |
| Ile Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr |      |      |      |
|   | 1525 | 1530 | 1535 |
| Gln Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys |      |      |      |
|   | 1540 | 1545 | 1550 |
| Gln His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr |      |      |      |
|   | 1555 | 1560 | 1565 |

Gly His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro Ser Ile His Glu  
 1570 1575 1580  
 Arg Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu Ala Asp Leu Arg  
 1585\_ 1590 1595 1600  
 Ile Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser Ser Lys Arg Ile  
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 Thr Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe  
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 Thr Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp Cys Ala Tyr Arg  
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 Glu Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg Thr Ser Ala Arg  
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 <212> DNA  
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|             |              |            |            |            |            |      |
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| gatgaagggc  | attctctgat   | tgctaattgg | acgcctaaaa | actatgtgcc | tcatccagaa | 1680 |
| cgtcaatcta  | cactcgttgc   | gaacactctt | tggaacaact | attccgatat | gcaagctgtg | 1740 |
| cagtccgatga | tttaataacaac | agcgcacgga | ggagcctatc | tatttggaa  | gtggggatct | 1800 |
| gctgtttcta  | atltatttcta  | tgttcacgac | agctctggga | aacctatcga | taattggcat | 1860 |
| catagaagcc  | ttggctacct   | attcgggtac | agtactcaca | gtttagatga | ccattctttc | 1920 |
| tgcttggctg  | caggacaatt   | actcgggaaa | tcgtccgatt | cctttattac | gtctacagaa | 1980 |
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| aaaacacgaa  | cctactatta   | ctttctagga | gcctacatcc | aagacctgaa | acgtgatgtg | 2400 |
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| ttggattcac  | gagcctacat   | gttcgggctt | acgaatcaaa | gagctctaca | cagacttcag | 2520 |
| acgctgttaa  | atgtgtcttg   | tgtgctgcgt | gggcaaagcc | atagttactc | cctggatctg | 2580 |
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&lt;211&gt; 3021

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 182

|             |             |             |             |             |             |      |
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| ccctatactg  | ttataggaga  | tccgagtggg  | actactgttt  | tttctgcagg  | agagttaaca  | 180  |
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| aaaacagatc  | ttttgttact  | caataatgag  | aagttctcat  | tctatagtaa  | tttagtctct  | 540  |
| ggagatgggg  | gagctataga  | tgctaagagc  | ttaacggttc  | aaggaattag  | caagctttgt  | 600  |
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| ggagggaattg | ctgctgttca  | ggatgggcag  | cagggagtgt  | catcatctac  | ttcaacagaa  | 780  |
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| tttctcaaca  | atgttgcttc  | tcctgtttac  | attgctgcta  | agcaaccaac  | aagtggacag  | 960  |
| gcttctaata  | cgagtaataa  | ttacggagat  | ggaggagcta  | tcttctgtaa  | gaatgggtgcg | 1020 |
| caagcaggat  | ccaataactc  | tggatcagtt  | tcctttgatg  | gagagggagt  | agttttcttt  | 1080 |
| agtagcaatg  | tagctgctgg  | gaaaggggga  | gctattttatg | ccaaaaagct  | ctcggttgct  | 1140 |
| aactgtggcc  | ctgtacaatt  | tttaagggaat | atcgctaattg | atggtggagc  | gattttattta | 1200 |
| ggagaatctg  | gagagctcag  | tttatctgct  | gattatggag  | atattatttt  | cgatgggaat  | 1260 |
| cttaaaaagaa | cagccaaaaga | gaatgctgcc  | gatgttaatg  | gcgtaactgt  | gtcctcacia  | 1320 |
| gccatttcga  | tgggatcggg  | agggaaaata  | acgacattaa  | gagctaaagc  | agggcatcag  | 1380 |
| attctcttta  | atgatcccat  | cgagatggca  | aacggaaata  | accagccagc  | gcagtcttcc  | 1440 |
| aaacttctaa  | aaattaacga  | tggatgaagga | tacacagggg  | atattgtttt  | tgctaattgga | 1500 |
| agcagtaatt  | tgtacaaaaa  | tgttacgata  | gagcaaggaa  | ggattgttct  | tcgtgaaaag  | 1560 |
| gcaaaattat  | cagtgaattc  | tctaagtcag  | acaggtggga  | gtctgtatat  | ggaagctggg  | 1620 |
| agtacattgg  | atlttgtaac  | tccacaacca  | ccacaacagc  | ctcctgccgc  | taatcagttg  | 1680 |
| atcacgcttt  | ccaatctgca  | tttgtctctt  | tcttctttgt  | tagcaaacia  | tgagtttacg  | 1740 |
| aatcctccta  | ccaatctctc  | agcgcaagat  | tcctactcctg | cagtcattgg  | tagcacaact  | 1800 |
| gctggttctg  | ttacaattag  | tgggcctatc  | ttttttgagg  | atlttgatga  | tacagcttat  | 1860 |
| gataggtagt  | attggctag   | ttctaataca  | aaaatcaatg  | tcctgaaatt  | acagttaggg  | 1920 |

|            |             |             |             |            |            |      |
|------------|-------------|-------------|-------------|------------|------------|------|
| actaagcccc | cagctaattgc | cccatcagat  | ttgactctag  | ggaatgagat | gcctaagtat | 1980 |
| ggctatcaag | gaagctggaa  | gcttgcggtg  | gatcctaata  | cagcaaataa | tggtccttat | 2040 |
| actctgaaag | ctacatggac  | taaaactggg  | tataatcctg  | ggcctgagcg | agtagcttct | 2100 |
| ttggttccaa | atagttttatg | gggatccatt  | ttagatatac  | gatctgcgca | ttcagcaatt | 2160 |
| caagcaagtg | tggatgggcg  | ctcttattgt  | cgaggattat  | gggtttcttg | agtttcgaat | 2220 |
| ttcttctatc | atgaccgcga  | tgcttttaggt | cagggatatac | ggtatattag | tgggggttat | 2280 |
| tccttaggag | caaactccta  | ctttggatca  | tcgatgtttg  | gtctagcatt | taccgaagta | 2340 |
| tttggtagat | ctaaagatta  | tgtagtgtgt  | cgttccaatc  | atcatgcttg | cataggatcc | 2400 |
| gtttatctat | ctacccaaca  | agctttatgt  | ggatcctatt  | tgttcggaga | tgcgtttatc | 2460 |
| cgtgctagct | acgggttttg  | gaatcagcat  | atgaaaacct  | catatacatt | tgcagaggag | 2520 |
| agcgatgttc | gttgggataa  | taactgtctg  | gctggagaga  | ttggagcggg | attaccgatt | 2580 |
| gtgattactc | catctaagct  | ctattttgaat | gagttgcgtc  | ctttcgtgca | agctgagttt | 2640 |
| tcttatgccg | atcatgaatc  | ttttacagag  | gaaggcgatc  | aagctcgggc | attcaagagc | 2700 |
| ggacatctcc | taaatctatc  | agttcctgtt  | ggagtgaagt  | ttgatcgatg | ttctagtaca | 2760 |
| catcctaata | aatatagctt  | tatggcggtc  | tatatctgtg  | atgcttatcg | caccatctct | 2820 |
| ggtactgaga | caacgctcct  | atcccatcaa  | gagacatgga  | caacagatgc | ctttcattta | 2880 |
| gcaagacatg | gagtttgtgt  | tagaggatct  | atgtatgctt  | ctctaacaag | taatatagaa | 2940 |
| gtatatggcc | atggaagata  | tgagtatcga  | gatgcttctc  | gaggctatgg | tttgagtgca | 3000 |
| ggaagtaaa  | tcggttcta   | a           |             |            |            | 3021 |

&lt;210&gt; 183

&lt;211&gt; 2934

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 183

|             |             |             |            |             |             |      |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| atggctagca  | tgactggtgg  | acagcaaagt  | ggctgggatt | caagcttggg  | accgagctcg  | 60   |
| gateccacatc | accatcacca  | tcacggacta  | gctagagagg | ttccttctag  | aatctttctt  | 120  |
| atgcccaact  | cagttccaga  | tcctacgaaa  | gagtcgctat | caaataaaat  | tagtttgaca  | 180  |
| ggagacactc  | acaatctcac  | taactgctat  | ctcgataacc | tacgctacat  | actggctatt  | 240  |
| ctacaaaaaa  | ctcccaatga  | aggagctgct  | gtcacataaa | cagattacct  | aagctttttt  | 300  |
| gatacacaaa  | aagaaggtat  | ttattttgca  | aaaaatctca | cccctgaaag  | tggtgggtcg  | 360  |
| attggttatg  | cgagtcccaa  | ttctcctacc  | gtggagattc | gtgatacaat  | aggtcctgta  | 420  |
| atctttgaaa  | ataatacttg  | ttgcagacta  | tttacatgga | gaaatcctta  | tgctgctgat  | 480  |
| aaaataagag  | aaggcggagc  | cattcatgct  | caaaatcttt | acataaatca  | taatcatgat  | 540  |
| gtggtcggat  | ttatgaagaa  | cttttcttat  | gtccaaggag | gagccattag  | taccgctaata | 600  |
| acctttgttg  | tgagcgagaa  | tcagtcttgt  | tttctcttta | tggacaacat  | ctgtattcaa  | 660  |
| actaatacag  | caggaaaagg  | tggcgctatc  | tatgctggaa | cgagcaattc  | ttttgagagt  | 720  |
| aataactcgc  | atctcttctt  | catcaataac  | gcctgtgtgt | caggaggagc  | gatcttctcc  | 780  |
| cctatctgtt  | ctctaacagg  | aaatcgtggt  | aacatcgttt | tctataacaa  | tcgctgcttt  | 840  |
| aaaaatgtag  | aaacagcttc  | ttcagaagct  | tctgatggag | gagcaattaa  | agtaactact  | 900  |
| cgcctagatg  | ttacaggcaa  | tcgtggtagg  | atctttttta | gtgacaatat  | cacaaaaaat  | 960  |
| tatggcggag  | ctattttacgc | tcctgtagtt  | accctagtgg | ataatggccc  | tacctacttt  | 1020 |
| ataaacaata  | tcgcccaataa | taaggggggc  | gctatctata | tagacggaac  | cagtaactcc  | 1080 |
| aaaattttctg | ccgaccgccca | tgctattatt  | tttaatgaaa | atattgtgac  | taatgtaact  | 1140 |
| aatgcaaagt  | gtaccagtag  | gtcagctaata | cctcctagaa | gaaatgcaat  | aacagtagca  | 1200 |
| agctcctctg  | gtgaaattct  | attaggagca  | gggagtagcc | aaaatttaata | tttttatgat  | 1260 |
| cctattgaag  | ttagcaatgc  | aggggtctct  | gtgtccttca | ataaggaagc  | tgatcaaaca  | 1320 |
| ggctctgtag  | tatttttcagg | agctactgtt  | aattctgcag | attttcatca  | acgcaattta  | 1380 |
| caaacaaaaa  | cacctgcacc  | ccttactctc  | agtaatgggt | ttctatgtat  | cgaagatcat  | 1440 |
| gctcagctta  | cagtgaatcg  | attcacacaa  | actgggggtg | ttgtttctct  | tgggaatgga  | 1500 |
| gcagttctga  | gttgctataa  | aaatggtaca  | ggagattctg | ctagcaatgc  | ctctataaca  | 1560 |
| ctgaagcata  | ttggattgaa  | tctttcttcc  | attctgaaaa | gtggtgctga  | gattccttta  | 1620 |
| ttgtgggtag  | agcctacaaa  | taacagcaat  | aactatacag | cagatactgc  | agctaccttt  | 1680 |
| tcattaagtg  | atgtaaaact  | ctcactcatt  | gatgactacg | ggaactctcc  | ttatgaatcc  | 1740 |
| acagatctga  | cccagctctc  | gtcatcacag  | cctatgctat | ctatttctga  | agctagcgat  | 1800 |
| aaccagctac  | aatcagaaaa  | tatagatttt  | tcgggactaa | atgtccctca  | ttatggatgg  | 1860 |

|            |             |             |            |            |             |      |
|------------|-------------|-------------|------------|------------|-------------|------|
| caaggacttt | ggacttgggg  | ctgggcaaaa  | actcaagatc | cagaaccagc | atcttcagca  | 1920 |
| acaatcactg | atccacaaaa  | agccaataga  | tttcatagaa | ccttactact | aacatggcctt | 1980 |
| cctgccgggt | atgttcctag  | cccaaaacac  | agaagtcccc | tcatagctaa | caccttatgg  | 2040 |
| gggaatatgc | tgtttgcaac  | agaaagctta  | aaaaatagtg | cagagctgac | acctagtggg  | 2100 |
| catcctttct | ggggaattac  | aggaggagga  | ctaggcatga | tggtttacca | agatcctcga  | 2160 |
| gaaaatcatc | ctggattcca  | tatgcgctct  | tccggatact | ctgcggggat | gatagcaggg  | 2220 |
| cagacacaca | ccttctcatt  | gaaattcagt  | cagacctaca | ccaaactcaa | tgagcggtac  | 2280 |
| gcaaaaaaca | acgtatcttc  | taaaaattac  | tcatgccaa  | gagaaatgct | cttctcattg  | 2340 |
| caagaagggt | tcttgctgac  | taaattagtt  | gggctttaca | gctatggaga | ccataactgt  | 2400 |
| caccatttct | atactcaagg  | agaaaatcta  | acatctcaag | ggacgttccg | cagtcaaacg  | 2460 |
| atgggaggtg | ctgtcttttt  | tgatctccct  | atgaaacctt | ttggatcaac | gcataactg   | 2520 |
| acagctccct | tttttaggtgc | tcttggtatt  | tattctagcc | tgtctcactt | tactgaggtg  | 2580 |
| ggagcctatc | cgcgaagcct  | ttctacaaa   | actcctttga | tcaatgtcct | agtccctatt  | 2640 |
| ggagttaaag | gtagctttat  | gaatgctacc  | cacagacctc | aagcctggac | tgtagaattg  | 2700 |
| gcataccaac | ccgttctgta  | tagacaagaa  | ccagggatcg | cgacctagct | cctagccagt  | 2760 |
| aaaggatatt | ggtttggtag  | tgggaagcccc | tcatcgcgct | atgccatgtc | ctataaaatc  | 2820 |
| tcacagcaaa | cacaaccttt  | gagttgggtt  | actctccatt | tccagtatca | tggattctac  | 2880 |
| tcctcttcaa | ccttctgtaa  | ttatctcaat  | ggggaaattg | ctctgcgatt | ctag        | 2934 |

&lt;210&gt; 184

&lt;211&gt; 2547

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 184

|             |            |            |             |            |             |      |
|-------------|------------|------------|-------------|------------|-------------|------|
| atggctagcc  | atcaccatca | ccatcacggt | gctattttctt | gcttacgtgg | agatgtagtc  | 60   |
| atttctggaa  | acaagggtag | agttgaattt | aaagacaaca  | tagcaacacg | tctttatgtg  | 120  |
| gaagaaactg  | tagaaaaggt | tgaagaggta | gagccagctc  | ctgagcaaaa | agacaataat  | 180  |
| gagctttctt  | tcttagggag | tgtagaacag | agttttatta  | ctgcagctaa | tcaagctctt  | 240  |
| ttcgcatctg  | aagatgggga | tttatcacct | gagtcaccca  | tttcttctga | agaacttgcg  | 300  |
| aaaagaagag  | agtgtgctgg | aggagctatt | tttgcaaaac  | gggttcgtat | tgtagataac  | 360  |
| caagaggccg  | ttgtattctc | gaataaactt | tctgatattt  | atggcggcgc | cattttttaca | 420  |
| ggttctcttc  | gagaagagga | taagttagat | gggcaaatcc  | ctgaagtctt | gatctcaggc  | 480  |
| aatgcagggg  | atgttggttt | ttccggaaat | tcttcgaagc  | gtgatgagca | tcttctctcat | 540  |
| acaggtgggg  | gagccatttg | tactcaaaat | ttgacgattt  | ctcagaatac | agggaaatgtt | 600  |
| ctgttttata  | acaacgtggc | ctgttcggga | ggagctgttc  | gtatagagga | tcatggtaat  | 660  |
| gttctttttg  | aagctttttg | aggagatatt | gtttttaaag  | gaaattcttc | tttcagagca  | 720  |
| caaggatccg  | atgctatcta | ttttgcagg  | aaagaatcgc  | atattacagc | cctgaatgct  | 780  |
| acggaaggac  | atgctattgt | tttccacgac | gcattagtgt  | ttgaaaatct | aaaagaaagg  | 840  |
| aaatctgctg  | aagtattggt | aatcaatagt | cgagaaaatc  | caggttacac | tggatctatt  | 900  |
| cgatttttag  | aagcagaaag | taaagttcct | caatgtattc  | atgtacaaca | aggaagcctt  | 960  |
| gagttgctaa  | atggagctac | attatgtagt | tatggtttta  | aacaagatgc | tggagctaag  | 1020 |
| ttgggtattg  | ctgctggatc | taaactgaag | attttagatt  | caggaactcc | tgtacaaggg  | 1080 |
| catgctatca  | gtaaacctga | agcagaaatc | gagtcactct  | ctgaaccaga | gggtgcacat  | 1140 |
| tctcttttga  | ttgcgaagaa | tgtctaaaca | acagttccta  | tggttgatat | ccatactatt  | 1200 |
| tctgtagatt  | tagcctcctt | ctcttctagt | caacaggagg  | ggacagtaga | agctcctcag  | 1260 |
| gttattgttc  | ctggaggaag | ttatgttcga | tctggagagc  | ttaatttgga | gttagttaac  | 1320 |
| acaacaggta  | ctggttatga | aaatcatgct | ttgttggaag  | atgaggctaa | agttccattg  | 1380 |
| atgtctttcg  | ttgcttctag | tgatgaagct | tcagccgaaa  | tcagtaactt | gtcggtttct  | 1440 |
| gattttacaga | ttcatgtagc | aactccagag | attgaagaag  | acacatacgg | ccatatggga  | 1500 |
| gattgggtctg | aggctaaaat | tcaagatgga | actcttgtca  | ttaatttgga | tctactgga   | 1560 |
| tatcgattag  | atcctcaaaa | agcaggggct | ttagtattta  | atgcattatg | ggaagaaggg  | 1620 |
| gctgtcttgt  | ctgctctgaa | aaatgcacgc | tttgcctcata | atctcactgc | tcagcgtatg  | 1680 |
| gaattcgatt  | attctacaaa | tgtgtgggga | ttcgcccttg  | gtggtttccg | aactctatct  | 1740 |
| gcagagaatc  | tggttgctat | tgatggatgc | aaaggagctt  | atggtggtgc | ttctgctgga  | 1800 |
| tgcgatattc  | aatttgatga | agattttgtt | ctaggagttt  | gtggagctgc | tttctaggt   | 1860 |
| aaaatggata  | gtcagaaggt | tgatgcggag | gtttctcgga  | agggagttgt | tggttctgta  | 1920 |

|            |            |             |            |             |            |      |
|------------|------------|-------------|------------|-------------|------------|------|
| tatacaggat | ttttagctgg | atcctgggttc | ttcaaaggac | aatatagcct  | tggagaaaca | 1980 |
| cagaacgata | tgaaaacgcg | ttatggagta  | ctaggagagt | cgagtgcctc  | ttggacatct | 2040 |
| cgaggagtac | tggcagatgc | tttagttgaa  | taccgaagt  | tagttgggtcc | tgtgagacct | 2100 |
| actttttatg | ctttgcattt | caatccttat  | gtcgaagtat | cttatgcctc  | tatgaaattc | 2160 |
| cctggcttta | cagaacaagg | aagagaagcg  | cgttcttttg | aagacgcctc  | ccttaccaat | 2220 |
| atcaccattc | ctttagggat | gaagtttgaa  | ttggcggttc | taaaaggaca  | gttttcagag | 2280 |
| gtgaactctt | tgggaataag | ttatgcatgg  | gaagcttatc | gaaaagtaga  | aggaggcgcg | 2340 |
| gtgcagcttt | tagaagctgg | gtttgattgg  | gagggagctc | caatggatct  | tcctagacag | 2400 |
| gagctgcgtg | tcgctctgga | aaataatacg  | gaatggagtt | cttacttcag  | cacagtctta | 2460 |
| ggattaacag | ctttttgtgg | aggattttact | tctacagata | gtaaactagg  | atatgaggcg | 2520 |
| aatactggat | tgcgattgat | cttttaa     |            |             |            | 2547 |

&lt;210&gt; 185

&lt;211&gt; 2337

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 185

|             |             |            |             |             |             |      |
|-------------|-------------|------------|-------------|-------------|-------------|------|
| atgcatcacc  | atcaccatca  | cgggttagct | agttgcgtag  | atcttcatgc  | tggaggacag  | 60   |
| tctgtaaattg | agctgggtata | tgtaggccct | caagcgggtt  | tattgttaga  | ccaaattcga  | 120  |
| gatctattcg  | ttgggtctaa  | agatagtcag | gctgaaggac  | agtatagggt  | aattgttaga  | 180  |
| gatccaagtt  | ctttccaaga  | gaaagatgca | gatactcttc  | ccgggaaggt  | agagcaaagt  | 240  |
| actttgttct  | cagtaacca   | tccgtgggt  | ttccaaggtg  | tggaccaaca  | ggatcaagtc  | 300  |
| tcttcccaag  | ggttaatttg  | tagttttacg | agcagcaacc  | ttgattctcc  | ccgtgacgga  | 360  |
| gaatcttttt  | taggtattgc  | ttttgttggg | gatagtagta  | aggctggaat  | cacattaact  | 420  |
| gacgtgaaag  | cttctttgtc  | tggagcggct | ttatattcta  | cagaagatct  | tatctttgaa  | 480  |
| aagattaagg  | gtggattgga  | atcttgcata | tgttcttctc  | tagaacaggg  | gggagcttgt  | 540  |
| gcagctcaaa  | gtattttgat  | tcatgattgt | caaggattgc  | aggttaaaca  | ctgtactaca  | 600  |
| gccgtgaatg  | ctgaggggtc  | tagtgccaat | gatcatcttg  | gattttggagg | aggcgctttc  | 660  |
| tttgttacgg  | gttctctttc  | tggagagaaa | agtctctata  | tgcttgcagg  | agatatggta  | 720  |
| gttgcgaatt  | gtgatggggc  | tatatctttt | gaaggaaaca  | gcgcgaactt  | tgctaattgga | 780  |
| ggagcgattg  | ctgcctctgg  | gaaagtgcct | tttgcgcta   | atgataaaaa  | gacttctttt  | 840  |
| atagagaacc  | gagctttgtc  | tggaggagcg | attgcagcct  | cttctgatat  | tgcttttcaa  | 900  |
| aactgcgcag  | aactagtttt  | caaaggcaat | tgtgcaattg  | gaacagagga  | taaaggttct  | 960  |
| ttaggtggag  | gggctatata  | ttctctaggc | accgttcttt  | tgcaagggaa  | tcacgggata  | 1020 |
| acttgtgata  | agaatgagtc  | tgccttcgaa | ggaggcgcca  | tttttgcaa   | aaattgtcag  | 1080 |
| atcttctgaca | acgagggggc  | agtggttttc | agagatagta  | cagcttgctt  | aggaggaggc  | 1140 |
| gctattgcag  | ctcaagaaat  | tgtttctatt | cagaacaate  | aggctgggat  | ttccttcgag  | 1200 |
| ggaggtaagg  | ctagtttcgg  | aggaggtatt | cgtgtgggat  | cttttcttc   | cgcaggcggt  | 1260 |
| gcttctgttt  | tagggactat  | tgatatttcg | aagaatttag  | gcgcgatttc  | gttctctcgt  | 1320 |
| actttatgta  | cgacctcaga  | tttaggacaa | atggagtacc  | agggaggagg  | agctctattt  | 1380 |
| ggtgaaaata  | tttctctttc  | tgagaatgct | ggtgtgctca  | cctttaaaga  | caacattgtg  | 1440 |
| aagacttttg  | cttcgaatgg  | gaaaattctg | ggaggaggag  | cgatttttagc | tactggtaag  | 1500 |
| gtggaaatta  | ccaataattc  | cggaggaatt | tcttttacag  | gaaatgcgag  | agctccacaa  | 1560 |
| gctcttccaa  | ctcaagagga  | gtttccttta | ttcagcaaaa  | aagaaggggc  | accactctct  | 1620 |
| tcaggatatt  | ctgggggagg  | agcgatttta | ggaagagaag  | tagctattct  | ccacaacgct  | 1680 |
| gcagtagtat  | ttgagcaaaa  | tcgtttgcag | tgacgcgaag  | aagaagcgac  | attattagggt | 1740 |
| tgttgtggag  | gaggcgctgt  | tcatgggatg | gatagcactt  | cgattgttgg  | caactcttca  | 1800 |
| gtaagatttg  | gtaataatta  | cgcaatggga | caaggagtct  | caggaggagc  | tcttttatct  | 1860 |
| aaaacagtgc  | agttagctgg  | aaatggaagc | gtcgattttt  | ctcgaaatat  | tgctagtttg  | 1920 |
| ggaggaggag  | ctcttcaagc  | ttctgaagga | aattgtgagc  | tagttgataa  | cggctatgtg  | 1980 |
| ctattcagag  | ataatcgagg  | gagggtttat | gggggtgcta  | tttcttgctt  | acgtggagat  | 2040 |
| gtagtcatth  | ctggaaacaa  | gggtagagtt | gaattttaaag | acaacatagc  | aacacgtctt  | 2100 |
| tatgtggaag  | aaactgtaga  | aaaggttgaa | gaggtagagc  | cagctcctga  | gcaaaaagac  | 2160 |
| aataactgagc | tttctttctt  | agggagtgtg | gaacagagtt  | ttattactgc  | agctaataca  | 2220 |
| gctcttttcg  | catctgaaga  | tggggattta | tcacctgagt  | catccatttc  | ttctgaagaa  | 2280 |
| cttgcgaaaa  | gaagagagtg  | tgctggagga | gctgactcga  | gcagatccgg  | ctgctaa     | 2337 |



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<210> 187

<211> 2466  
 <212> DNA  
 <213> Chlamydia

<400> 187

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| tgcaatgtta | gcaaagtagg | atattcaact | tctcaagcat  | ttactgatat  | gatgctagca  | 120  |
| gacaacacag | agtatcgagc | tgctgatagt | gtttcattct  | atgacttttc  | gacatcttcc  | 180  |
| ggattaccta | gaaaacatct | tagtagtagt | agtgaagctt  | ctccaacgac  | agaaggagtg  | 240  |
| tcttcatctt | catctggaga | aaatactgag | aattcacaag  | attcagctcc  | ctcttctgga  | 300  |
| gaaactgata | agaaaacaga | agaagaacta | gacaatggcg  | gaatcattta  | tgctagagag  | 360  |
| aaactaacta | tctcagaatc | tcaggactct | ctctctaate  | caagcataga  | actccatgac  | 420  |
| aatagttttt | tcttcggaga | aggtgaagtt | atctttgatc  | acagagttgc  | cctcaaaaac  | 480  |
| ggaggagcta | tttatggaga | gaaagaggta | gtctttgaaa  | acataaaaac  | tctactagta  | 540  |
| gaagtaaata | tctcggtcga | gaaagggggt | agcgctctatg | caaaagaacg  | agtatcttta  | 600  |
| gaaaatgtta | ccgaagcaac | cttctcctcc | aatgggtggg  | aacaagggtg  | tggtggaatc  | 660  |
| tattcagaac | aagatatgtt | aatcagtgat | tgcaacaatg  | tacatttcca  | agggaatgct  | 720  |
| gcaggagcaa | cagcagtaaa | acaatgtctg | gatgaagaaa  | tgatcgtatt  | gctcacagaa  | 780  |
| tgcgttgata | gcttatccga | agatacactg | gatagcactc  | cagaaacgga  | acagactaag  | 840  |
| tcaaattgaa | atcaagatgg | ttcgtctgaa | acaaaagata  | cacaagtatc  | agaatcacca  | 900  |
| gaatcaactc | ctagccccga | cgatgtttta | ggtaaagggtg | gtggtatcta  | tacagaaaaa  | 960  |
| tctttgacca | tacttggaat | tacagggact | atagattttg  | tcagtaacat  | agctaccgat  | 1020 |
| tctggagcag | gtgtattcac | taaagaaaac | ttgtcttgca  | ccaacacgaa  | tagcctacag  | 1080 |
| tttttgaaaa | actcggcagg | tcaacatgga | ggaggagcct  | acgttactca  | aaccatgtct  | 1140 |
| gttactaata | caactagtga | aagtataact | actccccctc  | tcgtaggaga  | agtgattttc  | 1200 |
| tctgaaaata | cagctaaagg | gcacgggtgg | ggtatctgca  | ctaacaaact  | ttctttatct  | 1260 |
| aattttaaaa | cggtgactct | cactaaaaac | tctgcaaagg  | agtctggagg  | agctattttt  | 1320 |
| acagatctag | cgtctatacc | aacaacagat | accccagagt  | cttctacccc  | ctcttctctc  | 1380 |
| tcgcctgcaa | gcaactccga | agtagttgct | tctgctaaaa  | taaatcgatt  | ctttgcctct  | 1440 |
| acggcagaac | cggcagcccc | ttctctaaca | gaggctgagt  | ctgatcaaac  | ggatcaaaca  | 1500 |
| gaaacttctg | atactaatag | cgatatagac | gtgtcgattg  | agaacatttt  | gaatgtcgct  | 1560 |
| atcaatcaaa | acacttctgc | gaaaaaagga | ggggctattt  | acgggaaaaa  | agctaaactt  | 1620 |
| tcccgtatta | acaatcttga | actttcaggg | aattcatccc  | aggatgtagg  | aggagggtct  | 1680 |
| tgtttaactg | aaagcgtaga | atttgatgca | attggatcgc  | tcttatccca  | ctataactct  | 1740 |
| gctgctaaag | aagggtgggt | tattcattct | aaaacggtta  | ctctatctaa  | cctcaagtct  | 1800 |
| accttcactt | ttgcagataa | cactgttaaa | gcaatagtag  | aaagcactcc  | tgaagctcca  | 1860 |
| gaagagattc | ctccagtaga | aggagaagag | tctacagcaa  | cagaaaatcc  | gaattctaata | 1920 |
| acagaaggaa | gttcggctaa | cactaacctt | gaaggatctc  | aaggggatac  | tgctgatata  | 1980 |
| gggactgggt | ttgttaacaa | tgagtctcaa | gacacatcag  | atactggaaa  | cgctgaatct  | 2040 |
| ggagaacaac | tacaagattc | tacacaatct | aatgaagaaa  | atacccttcc  | caatagtagt  | 2100 |
| attgatcaat | ctaacgaaaa | cacagacgaa | tcatctgata  | gccacactga  | ggaaataact  | 2160 |
| gacgagagtg | tctcatcgtc | ctctaaaagt | ggatcatcta  | ctcctcaaga  | tgaggaggca  | 2220 |
| gcttcttcag | gggctccctc | aggagatcaa | tctatctctg  | caaacgcttg  | tttagctaaa  | 2280 |
| agctatgctg | cgagtactga | tagctccctc | gtatctaatt  | cttcagggttc | agacgttact  | 2340 |
| gcattctctg | ataatccaga | ctcttccctc | tctggagata  | gcgctggaga  | ctctgaagga  | 2400 |
| ccgactgagc | cagaagctgg | ttctacaaca | gaaactccta  | ctttaatagg  | aggagggtgct | 2460 |
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<210> 188  
 <211> 1578  
 <212> DNA  
 <213> Chlamydia

<400> 188

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| cagggaattc | ccattccgat | cgggcaggcg | atggcgatcg | cgggccagat | caagcttccc | 120 |
| accgttcata | tcgggcctac | cgccttccct | ggcttgggtg | ttgtcgacaa | caacggcaac | 180 |

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gcgcttaacg ggcacatcatcc cgggtgacgtc atctcgggtga cctgggcaaac caagtcgggc 360
ggcagcgcta cagggaacgt gacattggcc gagggacccc cggccgaatt cccgctagta 420
cctagagggt caccgctgcc tgtggggaat ccagctgaac caagtttatt aatcgatggc 480
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aatactaata agccagaagc aaatggcaga ccgaacatcg cttacggaag gcatatgcaa 720
gatgcagagt ggttttcaaa tgcagccttc ctagccttaa acatttgga tcgcttcgac 780
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gcacaattcc gcttctaa 1578

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<210> 189

<211> 866

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> (1)...(866)

<223> Xaa = Any Amino Acid

<400> 189

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Gly Glu Thr Ala Leu Leu Thr Lys Asn Pro Asn His Val Val Cys Thr
          20          25          30
Phe Phe Glu Asp Cys Thr Met Glu Ser Leu Phe Pro Ala Leu Cys Ala
          35          40          45
His Ala Ser Gln Asp Asp Pro Leu Tyr Val Leu Gly Asn Ser Tyr Cys
          50          55          60
Trp Phe Val Ser Lys Leu His Ile Thr Asp Pro Lys Glu Ala Leu Phe
          65          70          75          80
Lys Glu Lys Gly Asp Leu Ser Ile Gln Asn Phe Arg Phe Leu Ser Phe
          85          90          95
Thr Asp Cys Ser Ser Lys Glu Ser Ser Pro Ser Ile Ile His Gln Lys
          100          105          110
Asn Gly Gln Leu Ser Leu Arg Asn Asn Gly Ser Met Ser Phe Cys Arg
          115          120          125
Asn His Ala Glu Gly Ser Gly Gly Ala Ile Ser Ala Asp Ala Phe Ser
          130          135          140
Leu Gln His Asn Tyr Leu Phe Thr Ala Phe Glu Glu Asn Ser Ser Lys
          145          150          155          160
Gly Asn Gly Gly Ala Ile Gln Ala Gln Thr Phe Ser Leu Ser Arg Asn

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Val | Ser | Pro | Ile | Ser | Phe | Ala | Arg | Asn | Arg | Ala | Asp | Leu | Asn | Gly | Gly |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ala | Ile | Cys | Cys | Ser | Asn | Leu | Ile | Cys | Ser | Gly | Asn | Val | Asn | Pro | Leu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Phe | Phe | Thr | Gly | Asn | Ser | Ala | Thr | Asn | Gly | Gly | Xaa | Ile | Cys | Cys | Ile |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ser | Asp | Leu | Asn | Thr | Ser | Glu | Lys | Gly | Ser | Leu | Ser | Leu | Ala | Cys | Asn |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Gln | Xaa | Thr | Leu | Phe | Ala | Ser | Asn | Ser | Ala | Lys | Glu | Lys | Gly | Gly | Ala |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ile | Tyr | Ala | Lys | His | Met | Val | Leu | Arg | Tyr | Asn | Gly | Pro | Val | Ser | Phe |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ile | Asn | Asn | Ser | Ala | Lys | Ile | Gly | Gly | Ala | Ile | Ala | Ile | Gln | Ser | Gly |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Gly | Ser | Leu | Ser | Ile | Leu | Ala | Gly | Glu | Gly | Ser | Val | Leu | Phe | Gln | Asn |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Asn | Ser | Gln | Arg | Thr | Ser | Asp | Gln | Gly | Leu | Val | Arg | Asn | Ala | Ile | Tyr |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Leu | Glu | Lys | Asp | Ala | Ile | Leu | Ser | Ser | Leu | Glu | Ala | Arg | Asn | Gly | Asp |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ile | Leu | Phe | Phe | Asp | Pro | Ile | Val | Gln | Glu | Ser | Ser | Ser | Lys | Glu | Ser |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Pro | Leu | Pro | Ser | Ser | Leu | Gln | Ala | Ser | Val | Thr | Ser | Pro | Thr | Pro | Ala |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Thr | Ala | Ser | Pro | Leu | Val | Ile | Gln | Thr | Ser | Ala | Asn | Arg | Ser | Val | Ile |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Phe | Ser | Ser | Glu | Arg | Leu | Ser | Glu | Glu | Glu | Lys | Thr | Pro | Asp | Asn | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Ser | Gln | Leu | Gln | Gln | Pro | Ile | Glu | Leu | Lys | Ser | Gly | Arg | Leu | Val |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Leu | Lys | Asp | Arg | Ala | Val | Leu | Ser | Xaa | Pro | Ser | Leu | Ser | Gln | Asp | Pro |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Gln | Ala | Leu | Leu | Ile | Met | Glu | Ala | Gly | Thr | Ser | Leu | Lys | Thr | Ser | Xaa |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Asp | Leu | Lys | Leu | Xaa | Thr | Xaa | Ser | Ile | Pro | Leu | His | Ser | Leu | Asp | Thr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Glu | Lys | Ser | Val | Thr | Ile | His | Ala | Pro | Asn | Leu | Ser | Ile | Gln | Lys | Ile |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Phe | Leu | Ser | Asn | Ser | Gly | Asp | Glu | Asn | Phe | Tyr | Glu | Asn | Val | Glu | Leu |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Leu | Ser | Lys | Glu | Gln | Asn | Asn | Ile | Pro | Leu | Leu | Thr | Leu | Pro | Lys | Glu |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Gln | Ser | His | Leu | His | Leu | Pro | Asp | Gly | Asn | Leu | Ser | Ser | His | Phe | Gly |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

Gly Tyr Leu Phe Gly Ile Ser Thr His Ser Leu Asp Asp His Ser Phe  
 625 630 635 640  
 Cys Leu Ala Ala Gly Gln Leu Leu Gly Lys Ser Ser Asp Ser Phe Ile  
 645 650 655  
 Thr Ser Thr Glu Thr Thr Ser Tyr Ile Ala Thr Val Gln Ala Gln Leu  
 660 665 670  
 Ala Thr Ser Leu Met Lys Ile Ser Ala Gln Ala Cys Tyr Asn Glu Ser  
 675 680 685  
 Ile His Glu Leu Lys Thr Lys Tyr Arg Ser Phe Ser Lys Glu Gly Phe  
 690 695 700  
 Gly Ser Trp His Ser Val Ala Val Ser Gly Glu Val Cys Ala Ser Ile  
 705 710 715 720  
 Pro Ile Val Ser Asn Gly Ser Gly Leu Phe Ser Ser Phe Ser Ile Phe  
 725 730 735  
 Ser Lys Leu Gln Gly Phe Ser Gly Thr Gln Asp Gly Phe Glu Glu Ser  
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 Ser Gly Glu Ile Arg Ser Phe Ser Ala Ser Ser Phe Arg Asn Ile Ser  
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 Leu Pro Ile Gly Ile Thr Phe Glu Lys Lys Ser Gln Lys Thr Arg Thr  
 770 775 780  
 Tyr Tyr Tyr Phe Leu Gly Ala Tyr Ile Gln Asp Leu Lys Arg Asp Val  
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 Glu Ser Gly Pro Val Val Leu Leu Lys Asn Ala Val Ser Trp Asp Ala  
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 Pro Met Ala Asn Leu Asp Ser Arg Ala Tyr Met Phe Arg Leu Thr Asn  
 820 825 830  
 Gln Arg Ala Leu His Arg Leu Gln Thr Leu Leu Asn Val Ser Cys Val  
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 <212> PRT  
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 35 40 45  
 Ser Gly Thr Thr Val Phe Ser Ala Gly Glu Leu Thr Leu Lys Asn Leu  
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 Asp Asn Ser Ile Ala Ala Leu Pro Leu Ser Cys Phe Gly Asn Leu Leu  
 65 70 75 80  
 Gly Ser Phe Thr Val Leu Gly Arg Gly His Ser Leu Thr Phe Glu Asn  
 85 90 95  
 Ile Arg Thr Ser Thr Asn Gly Ala Ala Leu Ser Asn Ser Ala Ala Asp  
 100 105 110  
 Gly Leu Phe Thr Ile Glu Gly Phe Lys Glu Leu Ser Phe Ser Asn Cys  
 115 120 125  
 Asn Ser Leu Leu Ala Val Leu Pro Ala Ala Thr Thr Asn Lys Gly Ser  
 130 135 140

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Thr | Pro | Thr | Thr | Thr | Ser | Thr | Pro | Ser | Asn | Gly | Thr | Ile | Tyr | Ser |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Lys | Thr | Asp | Leu | Leu | Leu | Leu | Asn | Asn | Glu | Lys | Phe | Ser | Phe | Tyr | Ser |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     |     | 175 |
| Asn | Leu | Val | Ser | Gly | Asp | Gly | Gly | Ala | Ile | Asp | Ala | Lys | Ser | Leu | Thr |
|     |     |     | 180 |     |     |     |     |     | 185 |     |     |     |     |     | 190 |
| Val | Gln | Gly | Ile | Ser | Lys | Leu | Cys | Val | Phe | Gln | Glu | Asn | Thr | Ala | Gln |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala | Asp | Gly | Gly | Ala | Cys | Gln | Val | Val | Thr | Ser | Phe | Ser | Ala | Met | Ala |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Asn | Glu | Ala | Pro | Ile | Ala | Phe | Val | Ala | Asn | Val | Ala | Gly | Val | Arg | Gly |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Gly | Ile | Ala | Ala | Val | Gln | Asp | Gly | Gln | Gln | Gly | Val | Ser | Ser | Ser |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |
| Thr | Ser | Thr | Glu | Asp | Pro | Val | Val | Ser | Phe | Ser | Arg | Asn | Thr | Ala | Val |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Glu | Phe | Asp | Gly | Asn | Val | Ala | Arg | Val | Gly | Gly | Gly | Ile | Tyr | Ser | Tyr |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Gly | Asn | Val | Ala | Phe | Leu | Asn | Asn | Gly | Lys | Thr | Leu | Phe | Leu | Asn | Asn |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Val | Ala | Ser | Pro | Val | Tyr | Ile | Ala | Ala | Lys | Gln | Pro | Thr | Ser | Gly | Gln |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Ala | Ser | Asn | Thr | Ser | Asn | Asn | Tyr | Gly | Asp | Gly | Gly | Ala | Ile | Phe | Cys |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Lys | Asn | Gly | Ala | Gln | Ala | Gly | Ser | Asn | Asn | Ser | Gly | Ser | Val | Ser | Phe |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Asp | Gly | Glu | Gly | Val | Val | Phe | Phe | Ser | Ser | Asn | Val | Ala | Ala | Gly | Lys |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Gly | Gly | Ala | Ile | Tyr | Ala | Lys | Lys | Leu | Ser | Val | Ala | Asn | Cys | Gly | Pro |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Val | Gln | Phe | Leu | Arg | Asn | Ile | Ala | Asn | Asp | Gly | Gly | Ala | Ile | Tyr | Leu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Gly | Glu | Ser | Gly | Glu | Leu | Ser | Leu | Ser | Ala | Asp | Tyr | Gly | Asp | Ile | Ile |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Phe | Asp | Gly | Asn | Leu | Lys | Arg | Thr | Ala | Lys | Glu | Asn | Ala | Ala | Asp | Val |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Asn | Gly | Val | Thr | Val | Ser | Ser | Gln | Ala | Ile | Ser | Met | Gly | Ser | Gly | Gly |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Lys | Ile | Thr | Thr | Leu | Arg | Ala | Lys | Ala | Gly | His | Gln | Ile | Leu | Phe | Asn |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Asp | Pro | Ile | Glu | Met | Ala | Asn | Gly | Asn | Asn | Gln | Pro | Ala | Gln | Ser | Ser |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Lys | Leu | Leu | Lys | Ile | Asn | Asp | Gly | Glu | Gly | Tyr | Thr | Gly | Asp | Ile | Val |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Phe | Ala | Asn | Gly | Ser | Ser | Thr | Leu | Tyr | Gln | Asn | Val | Thr | Ile | Glu | Gln |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Gly | Arg | Ile | Val | Leu | Arg | Glu | Lys | Ala | Lys | Leu | Ser | Val | Asn | Ser | Leu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ser | Gln | Thr | Gly | Gly | Ser | Leu | Tyr | Met | Glu | Ala | Gly | Ser | Thr | Leu | Asp |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Phe | Val | Thr | Pro | Gln | Pro | Pro | Gln | Gln | Pro | Pro | Ala | Ala | Asn | Gln | Leu |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Ile | Thr | Leu | Ser | Asn | Leu | His | Leu | Ser | Leu | Ser | Ser | Leu | Leu | Ala | Asn |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asn | Ala | Val | Thr | Asn | Pro | Pro | Thr | Asn | Pro | Pro | Ala | Gln | Asp | Ser | His |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Pro | Ala | Val | Ile | Gly | Ser | Thr | Thr | Ala | Gly | Ser | Val | Thr | Ile | Ser | Gly |

|   |     |      |
|---|-----|------|
| 595   | 600 | 605  |
| Pro Ile Phe Phe Glu Asp Leu Asp Asp Thr Ala Tyr Asp Arg Tyr Asp |     |      |
| 610   | 615 | 620  |
| Trp Leu Gly Ser Asn Gln Lys Ile Asn Val Leu Lys Leu Gln Leu Gly |     |      |
| 625   | 630 | 635  |
| Thr Lys Pro Pro Ala Asn Ala Pro Ser Asp Leu Thr Leu Gly Asn Glu |     |      |
|   | 645 | 650  |
| Met Pro Lys Tyr Gly Tyr Gln Gly Ser Trp Lys Leu Ala Trp Asp Pro |     |      |
|   | 660 | 665  |
| Asn Thr Ala Asn Asn Gly Pro Tyr Thr Leu Lys Ala Thr Trp Thr Lys |     |      |
|   | 675 | 680  |
| Thr Gly Tyr Asn Pro Gly Pro Glu Arg Val Ala Ser Leu Val Pro Asn |     |      |
|   | 690 | 695  |
| Ser Leu Trp Gly Ser Ile Leu Asp Ile Arg Ser Ala His Ser Ala Ile |     |      |
| 705   | 710 | 715  |
| Gln Ala Ser Val Asp Gly Arg Ser Tyr Cys Arg Gly Leu Trp Val Ser |     |      |
|   | 725 | 730  |
| Gly Val Ser Asn Phe Phe Tyr His Asp Arg Asp Ala Leu Gly Gln Gly |     |      |
|   | 740 | 745  |
| Tyr Arg Tyr Ile Ser Gly Gly Tyr Ser Leu Gly Ala Asn Ser Tyr Phe |     |      |
|   | 755 | 760  |
| Gly Ser Ser Met Phe Gly Leu Ala Phe Thr Glu Val Phe Gly Arg Ser |     |      |
|   | 770 | 775  |
| Lys Asp Tyr Val Val Cys Arg Ser Asn His His Ala Cys Ile Gly Ser |     |      |
| 785   | 790 | 795  |
| Val Tyr Leu Ser Thr Gln Gln Ala Leu Cys Gly Ser Tyr Leu Phe Gly |     |      |
|   | 805 | 810  |
| Asp Ala Phe Ile Arg Ala Ser Tyr Gly Phe Gly Asn Gln His Met Lys |     |      |
|   | 820 | 825  |
| Thr Ser Tyr Thr Phe Ala Glu Glu Ser Asp Val Arg Trp Asp Asn Asn |     |      |
|   | 835 | 840  |
| Cys Leu Ala Gly Glu Ile Gly Ala Gly Leu Pro Ile Val Ile Thr Pro |     |      |
|   | 850 | 855  |
| Ser Lys Leu Tyr Leu Asn Glu Leu Arg Pro Phe Val Gln Ala Glu Phe |     |      |
| 865   | 870 | 875  |
| Ser Tyr Ala Asp His Glu Ser Phe Thr Glu Glu Gly Asp Gln Ala Arg |     |      |
|   | 885 | 890  |
| Ala Phe Lys Ser Gly His Leu Leu Asn Leu Ser Val Pro Val Gly Val |     |      |
|   | 900 | 905  |
| Lys Phe Asp Arg Cys Ser Ser Thr His Pro Asn Lys Tyr Ser Phe Met |     |      |
|   | 915 | 920  |
| Ala Ala Tyr Ile Cys Asp Ala Tyr Arg Thr Ile Ser Gly Thr Glu Thr |     |      |
|   | 930 | 935  |
| Thr Leu Leu Ser His Gln Glu Thr Trp Thr Thr Asp Ala Phe His Leu |     |      |
| 945   | 950 | 955  |
| Ala Arg His Gly Val Val Val Arg Gly Ser Met Tyr Ala Ser Leu Thr |     |      |
|   | 965 | 970  |
| Ser Asn Ile Glu Val Tyr Gly His Gly Arg Tyr Glu Tyr Arg Asp Ala |     |      |
|   | 980 | 985  |
| Ser Arg Gly Tyr Gly Leu Ser Ala Gly Ser Lys Val Arg Phe         |     |      |
|   | 995 | 1000 |
|   |     | 1005 |

<210> 191  
 <211> 977  
 <212> PRT  
 <213> Chlamydia

&lt;400&gt; 191

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Met | Thr | Gly | Gly | Gln | Gln | Met | Gly | Arg | Asp | Ser | Ser | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Val | Pro | Ser | Ser | Asp | Pro | His | His | His | His | His | His | Gly | Leu | Ala | Arg |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Val | Pro | Ser | Arg | Ile | Phe | Leu | Met | Pro | Asn | Ser | Val | Pro | Asp | Pro |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Thr | Lys | Glu | Ser | Leu | Ser | Asn | Lys | Ile | Ser | Leu | Thr | Gly | Asp | Thr | His |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Asn | Leu | Thr | Asn | Cys | Tyr | Leu | Asp | Asn | Leu | Arg | Tyr | Ile | Leu | Ala | Ile |
| 65  |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     |     | 80  |
| Leu | Gln | Lys | Thr | Pro | Asn | Glu | Gly | Ala | Ala | Val | Thr | Ile | Thr | Asp | Tyr |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Leu | Ser | Phe | Phe | Asp | Thr | Gln | Lys | Glu | Gly | Ile | Tyr | Phe | Ala | Lys | Asn |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Thr | Pro | Glu | Ser | Gly | Gly | Ala | Ile | Gly | Tyr | Ala | Ser | Pro | Asn | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Pro | Thr | Val | Glu | Ile | Arg | Asp | Thr | Ile | Gly | Pro | Val | Ile | Phe | Glu | Asn |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Asn | Thr | Cys | Cys | Arg | Leu | Phe | Thr | Trp | Arg | Asn | Pro | Tyr | Ala | Ala | Asp |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     |     | 160 |
| Lys | Ile | Arg | Glu | Gly | Ala | Ile | His | Ala | Gln | Asn | Leu | Tyr | Ile | Asn |     |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     | 175 |     |
| His | Asn | His | Asp | Val | Val | Gly | Phe | Met | Lys | Asn | Phe | Ser | Tyr | Val | Gln |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Gly | Gly | Ala | Ile | Ser | Thr | Ala | Asn | Thr | Phe | Val | Val | Ser | Glu | Asn | Gln |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Cys | Phe | Leu | Phe | Met | Asp | Asn | Ile | Cys | Ile | Gln | Thr | Asn | Thr | Ala |
|     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |     |
| Gly | Lys | Gly | Gly | Ala | Ile | Tyr | Ala | Gly | Thr | Ser | Asn | Ser | Phe | Glu | Ser |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Asn | Asn | Cys | Asp | Leu | Phe | Phe | Ile | Asn | Asn | Ala | Cys | Cys | Ala | Gly | Gly |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Ala | Ile | Phe | Ser | Pro | Ile | Cys | Ser | Leu | Thr | Gly | Asn | Arg | Gly | Asn | Ile |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val | Phe | Tyr | Asn | Asn | Arg | Cys | Phe | Lys | Asn | Val | Glu | Thr | Ala | Ser | Ser |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Glu | Ala | Ser | Asp | Gly | Gly | Ala | Ile | Lys | Val | Thr | Thr | Arg | Leu | Asp | Val |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Thr | Gly | Asn | Arg | Gly | Arg | Ile | Phe | Phe | Ser | Asp | Asn | Ile | Thr | Lys | Asn |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     |     |     | 320 |
| Tyr | Gly | Gly | Ala | Ile | Tyr | Ala | Pro | Val | Val | Thr | Leu | Val | Asp | Asn | Gly |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |
| Pro | Thr | Tyr | Phe | Ile | Asn | Asn | Ile | Ala | Asn | Asn | Lys | Gly | Gly | Ala | Ile |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Tyr | Ile | Asp | Gly | Thr | Ser | Asn | Ser | Lys | Ile | Ser | Ala | Asp | Arg | His | Ala |
|     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |
| Ile | Ile | Phe | Asn | Glu | Asn | Ile | Val | Thr | Asn | Val | Thr | Asn | Ala | Asn | Gly |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Thr | Ser | Thr | Ser | Ala | Asn | Pro | Pro | Arg | Arg | Asn | Ala | Ile | Thr | Val | Ala |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     | 400 |
| Ser | Ser | Ser | Gly | Glu | Ile | Leu | Leu | Gly | Ala | Gly | Ser | Ser | Gln | Asn | Leu |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |     |
| Ile | Phe | Tyr | Asp | Pro | Ile | Glu | Val | Ser | Asn | Ala | Gly | Val | Ser | Val | Ser |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Phe | Asn | Lys | Glu | Ala | Asp | Gln | Thr | Gly | Ser | Val | Val | Phe | Ser | Gly | Ala |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Asn | Ser | Ala | Asp | Phe | His | Gln | Arg | Asn | Leu | Gln | Thr | Lys | Thr |
| 450 |     |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Pro | Ala | Pro | Leu | Thr | Leu | Ser | Asn | Gly | Phe | Leu | Cys | Ile | Glu | Asp | His |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Ala | Gln | Leu | Thr | Val | Asn | Arg | Phe | Thr | Gln | Thr | Gly | Gly | Val | Val | Ser |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Leu | Gly | Asn | Gly | Ala | Val | Leu | Ser | Cys | Tyr | Lys | Asn | Gly | Thr | Gly | Asp |
|     |     | 500 |     |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ser | Ala | Ser | Asn | Ala | Ser | Ile | Thr | Leu | Lys | His | Ile | Gly | Leu | Asn | Leu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ser | Ser | Ile | Leu | Lys | Ser | Gly | Ala | Glu | Ile | Pro | Leu | Leu | Trp | Val | Glu |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Pro | Thr | Asn | Asn | Ser | Asn | Asn | Tyr | Thr | Ala | Asp | Thr | Ala | Ala | Thr | Phe |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Ser | Leu | Ser | Asp | Val | Lys | Leu | Ser | Leu | Ile | Asp | Asp | Tyr | Gly | Asn | Ser |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Pro | Tyr | Glu | Ser | Thr | Asp | Leu | Thr | His | Ala | Leu | Ser | Ser | Gln | Pro | Met |
|     |     |     |     | 580 |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Leu | Ser | Ile | Ser | Glu | Ala | Ser | Asp | Asn | Gln | Leu | Gln | Ser | Glu | Asn | Ile |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Asp | Phe | Ser | Gly | Leu | Asn | Val | Pro | His | Tyr | Gly | Trp | Gln | Gly | Leu | Trp |
|     | 610 |     |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |
| Thr | Trp | Gly | Trp | Ala | Lys | Thr | Gln | Asp | Pro | Glu | Pro | Ala | Ser | Ser | Ala |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Thr | Ile | Thr | Asp | Pro | Gln | Lys | Ala | Asn | Arg | Phe | His | Arg | Thr | Leu | Leu |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Leu | Thr | Trp | Leu | Pro | Ala | Gly | Tyr | Val | Pro | Ser | Pro | Lys | His | Arg | Ser |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Pro | Leu | Ile | Ala | Asn | Thr | Leu | Trp | Gly | Asn | Met | Leu | Leu | Ala | Thr | Glu |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Ser | Leu | Lys | Asn | Ser | Ala | Glu | Leu | Thr | Pro | Ser | Gly | His | Pro | Phe | Trp |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Gly | Ile | Thr | Gly | Gly | Gly | Leu | Gly | Met | Met | Val | Tyr | Gln | Asp | Pro | Arg |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Glu | Asn | His | Pro | Gly | Phe | His | Met | Arg | Ser | Ser | Gly | Tyr | Ser | Ala | Gly |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Met | Ile | Ala | Gly | Gln | Thr | His | Thr | Phe | Ser | Leu | Lys | Phe | Ser | Gln | Thr |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Tyr | Thr | Lys | Leu | Asn | Glu | Arg | Tyr | Ala | Lys | Asn | Asn | Val | Ser | Ser | Lys |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Asn | Tyr | Ser | Cys | Gln | Gly | Glu | Met | Leu | Phe | Ser | Leu | Gln | Glu | Gly | Phe |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Leu | Leu | Thr | Lys | Leu | Val | Gly | Leu | Tyr | Ser | Tyr | Gly | Asp | His | Asn | Cys |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |
| His | His | Phe | Tyr | Thr | Gln | Gly | Glu | Asn | Leu | Thr | Ser | Gln | Gly | Thr | Phe |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |
| Arg | Ser | Gln | Thr | Met | Gly | Gly | Ala | Val | Phe | Phe | Asp | Leu | Pro | Met | Lys |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Pro | Phe | Gly | Ser | Thr | His | Ile | Leu | Thr | Ala | Pro | Phe | Leu | Gly | Ala | Leu |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |
| Gly | Ile | Tyr | Ser | Ser | Leu | Ser | His | Phe | Thr | Glu | Val | Gly | Ala | Tyr | Pro |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |
| Arg | Ser | Phe | Ser | Thr | Lys | Thr | Pro | Leu | Ile | Asn | Val | Leu | Val | Pro | Ile |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     | 880 |
| Gly | Val | Lys | Gly | Ser | Phe | Met | Asn | Ala | Thr | His | Arg | Pro | Gln | Ala | Trp |
|     |     |     |     | 885 |     |     |     |     | 890 |     |     |     |     | 895 |     |
| Thr | Val | Glu | Leu | Ala | Tyr | Gln | Pro | Val | Leu | Tyr | Arg | Gln | Glu | Pro | Gly |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|-----|-----|-----|
| Ile | Ala | Thr | 900 |     |     | Gln | Leu | Leu | Ala | Ser | 905 |     |     | Lys | Gly | Ile | Trp | Phe | 910 |  |  | Gly | Ser | Gly |
| Ser | Pro | Ser | Ser | Arg | His | Ala | Met | Ser | Tyr | Lys | Ile | Ser | Gln | Gln | Thr |     |     |     |     |  |  |     |     |     |
| Gln | Pro | Leu | Ser | Trp | Leu | Thr | Leu | His | Phe | Gln | Tyr | His | Gly | Phe | Tyr |     |     |     |     |  |  |     |     |     |
| Ser | Ser | Ser | Thr | Phe | Cys | Asn | Tyr | Leu | Asn | Gly | Glu | Ile | Ala | Leu | Arg |     |     |     |     |  |  |     |     |     |
| Phe |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |     |     |     |

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<210> 192
<211> 848
<212> PRT
<213> Chlamydia
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|       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <400> | 192 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met   | Ala | Ser | His | His | His | His | His | His | Gly | Ala | Ile | Ser | Cys | Leu | Arg |
| 1     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Gly   | Asp | Val | Val | Ile | Ser | Gly | Asn | Lys | Gly | Arg | Val | Glu | Phe | Lys | Asp |
|       |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asn   | Ile | Ala | Thr | Arg | Leu | Tyr | Val | Glu | Glu | Thr | Val | Glu | Lys | Val | Glu |
|       |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Glu   | Val | Glu | Pro | Ala | Pro | Glu | Gln | Lys | Asp | Asn | Asn | Glu | Leu | Ser | Phe |
|       | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Leu   | Gly | Ser | Val | Glu | Gln | Ser | Phe | Ile | Thr | Ala | Ala | Asn | Gln | Ala | Leu |
| 65    |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     |     | 80  |
| Phe   | Ala | Ser | Glu | Asp | Gly | Asp | Leu | Ser | Pro | Glu | Ser | Ser | Ile | Ser | Ser |
|       |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Glu   | Glu | Leu | Ala | Lys | Arg | Arg | Glu | Cys | Ala | Gly | Gly | Ala | Ile | Phe | Ala |
|       |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Lys   | Arg | Val | Arg | Ile | Val | Asp | Asn | Gln | Glu | Ala | Val | Val | Phe | Ser | Asn |
|       |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Asn   | Phe | Ser | Asp | Ile | Tyr | Gly | Gly | Ala | Ile | Phe | Thr | Gly | Ser | Leu | Arg |
|       | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Glu   | Glu | Asp | Lys | Leu | Asp | Gly | Gln | Ile | Pro | Glu | Val | Leu | Ile | Ser | Gly |
| 145   |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     |     | 160 |
| Asn   | Ala | Gly | Asp | Val | Val | Phe | Ser | Gly | Asn | Ser | Ser | Lys | Arg | Asp | Glu |
|       |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| His   | Leu | Pro | His | Thr | Gly | Gly | Gly | Ala | Ile | Cys | Thr | Gln | Asn | Leu | Thr |
|       |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ile   | Ser | Gln | Asn | Thr | Gly | Asn | Val | Leu | Phe | Tyr | Asn | Asn | Val | Ala | Cys |
|       |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Ser   | Gly | Gly | Ala | Val | Arg | Ile | Glu | Asp | His | Gly | Asn | Val | Leu | Leu | Glu |
|       | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ala   | Phe | Gly | Gly | Asp | Ile | Val | Phe | Lys | Gly | Asn | Ser | Ser | Phe | Arg | Ala |
| 225   |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Gln   | Gly | Ser | Asp | Ala | Ile | Tyr | Phe | Ala | Gly | Lys | Glu | Ser | His | Ile | Thr |
|       |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ala   | Leu | Asn | Ala | Thr | Glu | Gly | His | Ala | Ile | Val | Phe | His | Asp | Ala | Leu |
|       |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val   | Phe | Glu | Asn | Leu | Lys | Glu | Arg | Lys | Ser | Ala | Glu | Val | Leu | Leu | Ile |
|       | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Asn   | Ser | Arg | Glu | Asn | Pro | Gly | Tyr | Thr | Gly | Ser | Ile | Arg | Phe | Leu | Glu |
|       | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ala   | Glu | Ser | Lys | Val | Pro | Gln | Cys | Ile | His | Val | Gln | Gln | Gly | Ser | Leu |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Glu | Leu | Leu | Asn | Gly | Ala | Thr | Leu | Cys | Ser | Tyr | Gly | Phe | Lys | Gln | Asp |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ala | Gly | Ala | Lys | Leu | Val | Leu | Ala | Ala | Gly | Ser | Lys | Leu | Lys | Ile | Leu |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Asp | Ser | Gly | Thr | Pro | Val | Gln | Gly | His | Ala | Ile | Ser | Lys | Pro | Glu | Ala |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Glu | Ile | Glu | Ser | Ser | Ser | Glu | Pro | Glu | Gly | Ala | His | Ser | Leu | Trp | Ile |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ala | Lys | Asn | Ala | Gln | Thr | Thr | Val | Pro | Met | Val | Asp | Ile | His | Thr | Ile |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Ser | Val | Asp | Leu | Ala | Ser | Phe | Ser | Ser | Ser | Gln | Gln | Glu | Gly | Thr | Val |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Glu | Ala | Pro | Gln | Val | Ile | Val | Pro | Gly | Gly | Ser | Tyr | Val | Arg | Ser | Gly |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Glu | Leu | Asn | Leu | Glu | Leu | Val | Asn | Thr | Thr | Gly | Thr | Gly | Tyr | Glu | Asn |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| His | Ala | Leu | Leu | Lys | Asn | Glu | Ala | Lys | Val | Pro | Leu | Met | Ser | Phe | Val |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Ala | Ser | Ser | Asp | Glu | Ala | Ser | Ala | Glu | Ile | Ser | Asn | Leu | Ser | Val | Ser |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Asp | Leu | Gln | Ile | His | Val | Ala | Thr | Pro | Glu | Ile | Glu | Glu | Asp | Thr | Tyr |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Gly | His | Met | Gly | Asp | Trp | Ser | Glu | Ala | Lys | Ile | Gln | Asp | Gly | Thr | Leu |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Val | Ile | Asn | Trp | Asn | Pro | Thr | Gly | Tyr | Arg | Leu | Asp | Pro | Gln | Lys | Ala |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Gly | Ala | Leu | Val | Phe | Asn | Ala | Leu | Trp | Glu | Glu | Gly | Ala | Val | Leu | Ser |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Ala | Leu | Lys | Asn | Ala | Arg | Phe | Ala | His | Asn | Leu | Thr | Ala | Gln | Arg | Met |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Glu | Phe | Asp | Tyr | Ser | Thr | Asn | Val | Trp | Gly | Phe | Ala | Phe | Gly | Gly | Phe |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Arg | Thr | Leu | Ser | Ala | Glu | Asn | Leu | Val | Ala | Ile | Asp | Gly | Tyr | Lys | Gly |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Ala | Tyr | Gly | Gly | Ala | Ser | Ala | Gly | Val | Asp | Ile | Gln | Leu | Met | Glu | Asp |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Phe | Val | Leu | Gly | Val | Ser | Gly | Ala | Ala | Phe | Leu | Gly | Lys | Met | Asp | Ser |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Gln | Lys | Phe | Asp | Ala | Glu | Val | Ser | Arg | Lys | Gly | Val | Val | Gly | Ser | Val |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Tyr | Thr | Gly | Phe | Leu | Ala | Gly | Ser | Trp | Phe | Phe | Lys | Gly | Gln | Tyr | Ser |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Leu | Gly | Glu | Thr | Gln | Asn | Asp | Met | Lys | Thr | Arg | Tyr | Gly | Val | Leu | Gly |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Glu | Ser | Ser | Ala | Ser | Trp | Thr | Ser | Arg | Gly | Val | Leu | Ala | Asp | Ala | Leu |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Val | Glu | Tyr | Arg | Ser | Leu | Val | Gly | Pro | Val | Arg | Pro | Thr | Phe | Tyr | Ala |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Leu | His | Phe | Asn | Pro | Tyr | Val | Glu | Val | Ser | Tyr | Ala | Ser | Met | Lys | Phe |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Pro | Gly | Phe | Thr | Glu | Gln | Gly | Arg | Glu | Ala | Arg | Ser | Phe | Glu | Asp | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Ser | Leu | Thr | Asn | Ile | Thr | Ile | Pro | Leu | Gly | Met | Lys | Phe | Glu | Leu | Ala |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Phe | Ile | Lys | Gly | Gln | Phe | Ser | Glu | Val | Asn | Ser | Leu | Gly | Ile | Ser | Tyr |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Trp | Glu | Ala | Tyr | Arg | Lys | Val | Glu | Gly | Gly | Ala | Val | Gln | Leu | Leu |
| 770 |     |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Glu | Ala | Gly | Phe | Asp | Trp | Glu | Gly | Ala | Pro | Met | Asp | Leu | Pro | Arg | Gln |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |
| Glu | Leu | Arg | Val | Ala | Leu | Glu | Asn | Asn | Thr | Glu | Trp | Ser | Ser | Tyr | Phe |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |
| Ser | Thr | Val | Leu | Gly | Leu | Thr | Ala | Phe | Cys | Gly | Gly | Phe | Thr | Ser | Thr |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Asp | Ser | Lys | Leu | Gly | Tyr | Glu | Ala | Asn | Thr | Gly | Leu | Arg | Leu | Ile | Phe |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |

<210> 193  
 <211> 778  
 <212> PRT  
 <213> Chlamydia

<400> 193

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | His | His | His | His | His | Gly | Leu | Ala | Ser | Cys | Val | Asp | Leu | His |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala | Gly | Gly | Gln | Ser | Val | Asn | Glu | Leu | Val | Tyr | Val | Gly | Pro | Gln | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Val | Leu | Leu | Leu | Asp | Gln | Ile | Arg | Asp | Leu | Phe | Val | Gly | Ser | Lys | Asp |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ser | Gln | Ala | Glu | Gly | Gln | Tyr | Arg | Leu | Ile | Val | Gly | Asp | Pro | Ser | Ser |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Phe | Gln | Glu | Lys | Asp | Ala | Asp | Thr | Leu | Pro | Gly | Lys | Val | Glu | Gln | Ser |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Thr | Leu | Phe | Ser | Val | Thr | Asn | Pro | Val | Val | Phe | Gln | Gly | Val | Asp | Gln |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Gln | Asp | Gln | Val | Ser | Ser | Gln | Gly | Leu | Ile | Cys | Ser | Phe | Thr | Ser | Ser |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Asn | Leu | Asp | Ser | Pro | Arg | Asp | Gly | Glu | Ser | Phe | Leu | Gly | Ile | Ala | Phe |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Val | Gly | Asp | Ser | Ser | Lys | Ala | Gly | Ile | Thr | Leu | Thr | Asp | Val | Lys | Ala |
|     |     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |
| Ser | Leu | Ser | Gly | Ala | Ala | Leu | Tyr | Ser | Thr | Glu | Asp | Leu | Ile | Phe | Glu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Lys | Ile | Lys | Gly | Gly | Leu | Glu | Phe | Ala | Ser | Cys | Ser | Ser | Leu | Glu | Gln |
|     |     |     | 165 |     |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Gly | Gly | Ala | Cys | Ala | Ala | Gln | Ser | Ile | Leu | Ile | His | Asp | Cys | Gln | Gly |
|     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Leu | Gln | Val | Lys | His | Cys | Thr | Thr | Ala | Val | Asn | Ala | Glu | Gly | Ser | Ser |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala | Asn | Asp | His | Leu | Gly | Phe | Gly | Gly | Gly | Ala | Phe | Phe | Val | Thr | Gly |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Ser | Leu | Ser | Gly | Glu | Lys | Ser | Leu | Tyr | Met | Pro | Ala | Gly | Asp | Met | Val |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Val | Ala | Asn | Cys | Asp | Gly | Ala | Ile | Ser | Phe | Glu | Gly | Asn | Ser | Ala | Asn |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Phe | Ala | Asn | Gly | Gly | Ala | Ile | Ala | Ala | Ser | Gly | Lys | Val | Leu | Phe | Val |
|     |     | 260 |     |     |     |     | 265 |     |     |     |     |     | 270 |     |     |
| Ala | Asn | Asp | Lys | Lys | Thr | Ser | Phe | Ile | Glu | Asn | Arg | Ala | Leu | Ser | Gly |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Gly | Ala | Ile | Ala | Ala | Ser | Ser | Asp | Ile | Ala | Phe | Gln | Asn | Cys | Ala | Glu |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Leu | Val | Phe | Lys | Gly | Asn | Cys | Ala | Ile | Gly | Thr | Glu | Asp | Lys | Gly | Ser |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |

Leu Gly Gly Gly Ala Ile Ser Ser Leu Gly Thr Val Leu Leu Gln Gly  
 325 330 335  
 Asn His Gly Ile Thr Cys Asp Lys Asn Glu Ser Ala Ser Gln Gly Gly  
 340 345 350  
 Ala Ile Phe Gly Lys Asn Cys Gln Ile Ser Asp Asn Glu Gly Pro Val  
 355 360 365  
 Val Phe Arg Asp Ser Thr Ala Cys Leu Gly Gly Gly Ala Ile Ala Ala  
 370 375 380  
 Gln Glu Ile Val Ser Ile Gln Asn Asn Gln Ala Gly Ile Ser Phe Glu  
 385 390 395 400  
 Gly Gly Lys Ala Ser Phe Gly Gly Gly Ile Ala Cys Gly Ser Phe Ser  
 405 410 415  
 Ser Ala Gly Gly Ala Ser Val Leu Gly Thr Ile Asp Ile Ser Lys Asn  
 420 425 430  
 Leu Gly Ala Ile Ser Phe Ser Arg Thr Leu Cys Thr Thr Ser Asp Leu  
 435 440 445  
 Gly Gln Met Glu Tyr Gln Gly Gly Gly Ala Leu Phe Gly Glu Asn Ile  
 450 455 460  
 Ser Leu Ser Glu Asn Ala Gly Val Leu Thr Phe Lys Asp Asn Ile Val  
 465 470 475 480  
 Lys Thr Phe Ala Ser Asn Gly Lys Ile Leu Gly Gly Gly Ala Ile Leu  
 485 490 495  
 Ala Thr Gly Lys Val Glu Ile Thr Asn Asn Ser Gly Gly Ile Ser Phe  
 500 505 510  
 Thr Gly Asn Ala Arg Ala Pro Gln Ala Leu Pro Thr Gln Glu Glu Phe  
 515 520 525  
 Pro Leu Phe Ser Lys Lys Glu Gly Arg Pro Leu Ser Ser Gly Tyr Ser  
 530 535 540  
 Gly Gly Gly Ala Ile Leu Gly Arg Glu Val Ala Ile Leu His Asn Ala  
 545 550 555 560  
 Ala Val Val Phe Glu Gln Asn Arg Leu Gln Cys Ser Glu Glu Glu Ala  
 565 570 575  
 Thr Leu Leu Gly Cys Cys Gly Gly Gly Ala Val His Gly Met Asp Ser  
 580 585 590  
 Thr Ser Ile Val Gly Asn Ser Ser Val Arg Phe Gly Asn Asn Tyr Ala  
 595 600 605  
 Met Gly Gln Gly Val Ser Gly Gly Ala Leu Leu Ser Lys Thr Val Gln  
 610 615 620  
 Leu Ala Gly Asn Gly Ser Val Asp Phe Ser Arg Asn Ile Ala Ser Leu  
 625 630 635 640  
 Gly Gly Gly Ala Leu Gln Ala Ser Glu Gly Asn Cys Glu Leu Val Asp  
 645 650 655  
 Asn Gly Tyr Val Leu Phe Arg Asp Asn Arg Gly Arg Val Tyr Gly Gly  
 660 665 670  
 Ala Ile Ser Cys Leu Arg Gly Asp Val Val Ile Ser Gly Asn Lys Gly  
 675 680 685  
 Arg Val Glu Phe Lys Asp Asn Ile Ala Thr Arg Leu Tyr Val Glu Glu  
 690 695 700  
 Thr Val Glu Lys Val Glu Glu Val Glu Pro Ala Pro Glu Gln Lys Asp  
 705 710 715 720  
 Asn Asn Glu Leu Ser Phe Leu Gly Ser Val Glu Gln Ser Phe Ile Thr  
 725 730 735  
 Ala Ala Asn Gln Ala Leu Phe Ala Ser Glu Asp Gly Asp Leu Ser Pro  
 740 745 750  
 Glu Ser Ser Ile Ser Ser Glu Glu Ala Lys Arg Arg Glu Cys Ala  
 755 760 765  
 Gly Gly Ala Asp Ser Ser Arg Ser Gly Cys

770

775

<210> 194  
 <211> 948  
 <212> PRT  
 <213> Chlamydia

&lt;400&gt; 194

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ser | Met | His | His | His | His | His | His | Val | Lys | Ile | Glu | Asn | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser | Gly | Gln | Gly | Ile | Phe | Ser | Gly | Asn | Lys | Ala | Ile | Asp | Asn | Thr | Thr |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Glu | Gly | Ser | Ser | Ser | Lys | Ser | Asn | Val | Leu | Gly | Gly | Ala | Val | Tyr | Ala |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Lys | Thr | Leu | Phe | Asn | Leu | Asp | Ser | Gly | Ser | Ser | Arg | Arg | Thr | Val | Thr |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Phe | Ser | Gly | Asn | Thr | Val | Ser | Ser | Gln | Ser | Thr | Thr | Gly | Gln | Val | Ala |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |
| Gly | Gly | Ala | Ile | Tyr | Ser | Pro | Thr | Val | Thr | Ile | Ala | Thr | Pro | Val | Val |
|     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |
| Phe | Ser | Lys | Asn | Ser | Ala | Thr | Asn | Asn | Ala | Asn | Asn | Ala | Thr | Asp | Thr |
|     |     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Gln | Arg | Lys | Asp | Thr | Phe | Gly | Gly | Ala | Ile | Gly | Ala | Thr | Ser | Ala | Val |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Ser | Leu | Ser | Gly | Gly | Ala | His | Phe | Leu | Glu | Asn | Val | Ala | Asp | Leu | Gly |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser | Ala | Ile | Gly | Leu | Val | Pro | Asp | Thr | Gln | Asn | Thr | Glu | Thr | Val | Lys |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Leu | Glu | Ser | Gly | Ser | Tyr | Tyr | Phe | Glu | Lys | Asn | Lys | Ala | Leu | Lys | Arg |
|     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |
| Ala | Thr | Ile | Tyr | Ala | Pro | Val | Val | Ser | Ile | Lys | Ala | Tyr | Thr | Ala | Thr |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Phe | Asn | Gln | Asn | Arg | Ser | Leu | Glu | Glu | Gly | Ser | Ala | Ile | Tyr | Phe | Thr |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Lys | Glu | Ala | Ser | Ile | Glu | Ser | Leu | Gly | Ser | Val | Leu | Phe | Thr | Gly | Asn |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Leu | Val | Thr | Pro | Thr | Leu | Ser | Thr | Thr | Thr | Glu | Gly | Thr | Pro | Ala | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Thr | Ser | Gly | Asp | Val | Thr | Lys | Tyr | Gly | Ala | Ala | Ile | Phe | Gly | Gln | Ile |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |
| Ala | Ser | Ser | Asn | Gly | Ser | Gln | Thr | Asp | Asn | Leu | Pro | Leu | Lys | Leu | Ile |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Ser | Gly | Gly | Asn | Ile | Cys | Phe | Arg | Asn | Asn | Glu | Tyr | Arg | Pro | Thr |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ser | Ser | Asp | Thr | Gly | Thr | Ser | Thr | Phe | Cys | Ser | Ile | Ala | Gly | Asp | Val |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Lys | Leu | Thr | Met | Gln | Ala | Ala | Lys | Gly | Lys | Thr | Ile | Ser | Phe | Phe | Asp |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     | 320 |     |
| Ala | Ile | Arg | Thr | Ser | Thr | Lys | Lys | Thr | Gly | Thr | Gln | Ala | Thr | Ala | Tyr |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |
| Asp | Thr | Leu | Asp | Ile | Asn | Lys | Ser | Glu | Asp | Ser | Glu | Thr | Val | Asn | Ser |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ala | Phe | Thr | Gly | Thr | Ile | Leu | Phe | Ser | Ser | Glu | Leu | His | Glu | Asn | Lys |
|     | 355 |     |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ser | Tyr | Ile | Pro | Gln | Asn | Val | Val | Leu | His | Ser | Gly | Ser | Leu | Val | Leu |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Lys | Pro | Asn | Thr | Glu | Leu | His | Val | Ile | Ser | Phe | Glu | Gln | Lys | Glu | Gly |

|   |   |     |     |     |     |     |
|---|---|-----|-----|-----|-----|-----|
| 385   |   | 390 |     | 395 |     | 400 |
| Ser Ser Leu Val   | Met Thr Pro Gly Ser Val Leu Ser Asn Gln Thr Val |     |     |     |     |     |
|   | 405   |     | 410 |     | 415 |     |
| Ala Asp Gly Ala   | Leu Val Ile Asn Asn Met Thr Ile Asp Leu Ser Ser |     |     |     |     |     |
|   | 420   |     | 425 |     | 430 |     |
| Val Glu Lys Asn Gly   | Ile Ala Glu Gly Asn Ile Phe Thr Pro Pro Glu     |     |     |     |     |     |
|   | 435   |     | 440 |     | 445 |     |
| Leu Arg Ile Ile Asp Thr   | Thr Thr Ser Gly Ser Gly Gly Thr Pro Ser         |     |     |     |     |     |
|   | 450   |     | 455 |     | 460 |     |
| Thr Asp Ser Glu Ser Asn Gln Asn Ser Asp Asp Thr Lys Glu Gln Asn |   |     |     |     |     |     |
|   | 465   |     | 470 |     | 475 |     |
| Asn Asn Asp Ala Ser Asn Gln Gly Glu Ser Ala Asn Gly Ser Ser Ser |   |     |     |     |     |     |
|   | 485   |     | 490 |     | 495 |     |
| Pro Ala Val Ala Ala His Thr Ser Arg Thr Arg Asn Phe Ala Ala     |   |     |     |     |     |     |
|   | 500   |     | 505 |     | 510 |     |
| Ala Ala Thr Ala Thr Pro Thr Thr Thr Pro Thr Ala Thr Thr Thr Thr |   |     |     |     |     |     |
|   | 515   |     | 520 |     | 525 |     |
| Ser Asn Gln Val Ile Leu Gly Gly Glu Ile Lys Leu Ile Asp Pro Asn |   |     |     |     |     |     |
|   | 530   |     | 535 |     | 540 |     |
| Gly Thr Phe Phe Gln Asn Pro Ala Leu Arg Ser Asp Gln Gln Ile Ser |   |     |     |     |     |     |
|   | 545   |     | 550 |     | 555 |     |
| Leu Leu Val Leu Pro Thr Asp Ser Ser Lys Met Gln Ala Gln Lys Ile |   |     |     |     |     |     |
|   | 565   |     | 570 |     | 575 |     |
| Val Leu Thr Gly Asp Ile Ala Pro Gln Lys Gly Tyr Thr Gly Thr Leu |   |     |     |     |     |     |
|   | 580   |     | 585 |     | 590 |     |
| Thr Leu Asp Pro Asp Gln Leu Gln Asn Gly Thr Ile Ser Ala Leu Trp |   |     |     |     |     |     |
|   | 595   |     | 600 |     | 605 |     |
| Lys Phe Asp Ser Tyr Arg Gln Trp Ala Tyr Val Pro Arg Asp Asn His |   |     |     |     |     |     |
|   | 610   |     | 615 |     | 620 |     |
| Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Met Ser Met Val Thr Val |   |     |     |     |     |     |
|   | 625   |     | 630 |     | 635 |     |
| Lys Gln Gly Leu Leu Asn Asp Lys Met Asn Leu Ala Arg Phe Asp Glu |   |     |     |     |     |     |
|   | 645   |     | 650 |     | 655 |     |
| Val Ser Tyr Asn Asn Leu Trp Ile Ser Gly Leu Gly Thr Met Leu Ser |   |     |     |     |     |     |
|   | 660   |     | 665 |     | 670 |     |
| Gln Val Gly Thr Pro Thr Ser Glu Glu Phe Thr Tyr Tyr Ser Arg Gly |   |     |     |     |     |     |
|   | 675   |     | 680 |     | 685 |     |
| Ala Ser Val Ala Leu Asp Ala Lys Pro Ala His Asp Val Ile Val Gly |   |     |     |     |     |     |
|   | 690   |     | 695 |     | 700 |     |
| Ala Ala Phe Ser Lys Met Ile Gly Lys Thr Lys Ser Leu Lys Arg Glu |   |     |     |     |     |     |
|   | 705   |     | 710 |     | 715 |     |
| Asn Asn Tyr Thr His Lys Gly Ser Glu Tyr Ser Tyr Gln Ala Ser Val |   |     |     |     |     |     |
|   | 725   |     | 730 |     | 735 |     |
| Tyr Gly Gly Lys Pro Phe His Phe Val Ile Asn Lys Lys Thr Glu Lys |   |     |     |     |     |     |
|   | 740   |     | 745 |     | 750 |     |
| Ser Leu Pro Leu Leu Leu Gln Gly Val Ile Ser Tyr Gly Tyr Ile Lys |   |     |     |     |     |     |
|   | 755   |     | 760 |     | 765 |     |
| His Asp Thr Val Thr His Tyr Pro Thr Ile Arg Glu Arg Asn Gln Gly |   |     |     |     |     |     |
|   | 770   |     | 775 |     | 780 |     |
| Glu Trp Glu Asp Leu Gly Trp Leu Thr Ala Leu Arg Val Ser Ser Val |   |     |     |     |     |     |
|   | 785   |     | 790 |     | 795 |     |
| Leu Arg Thr Pro Ala Gln Gly Asp Thr Lys Arg Ile Thr Val Tyr Gly |   |     |     |     |     |     |
|   | 805   |     | 810 |     | 815 |     |
| Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr Glu Thr Glu |   |     |     |     |     |     |
|   | 820   |     | 825 |     | 830 |     |
| Tyr Asp Pro Arg Tyr Phe Asp Asn Cys Thr Tyr Arg Asn Leu Ala Ile |   |     |     |     |     |     |
|   | 835   |     | 840 |     | 845 |     |

Pro Met Gly Leu Ala Phe Glu Gly Glu Leu Ser Gly Asn Asp Ile Leu  
 850 855 860  
 Met Tyr Asn Arg Phe Ser Val Ala Tyr Met Pro Ser Ile Tyr Arg Asn  
 865 870 875 880  
 Ser Pro Thr Cys Lys Tyr Gln Val Leu Ser Ser Gly Glu Gly Gly Glu  
 885 890 895  
 Ile Ile Cys Gly Val Pro Thr Arg Asn Ser Ala Arg Gly Glu Tyr Ser  
 900 905 910  
 Thr Gln Leu Tyr Pro Gly Pro Leu Trp Thr Leu Tyr Gly Ser Tyr Thr  
 915 920 925  
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 930 935 940  
 Arg Met Thr Phe  
 945

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 <213> Chlamydia

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 Lys Asn Thr Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln  
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 Ala Phe Thr Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala  
 35 40 45  
 Asp Ser Val Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg  
 50 55 60  
 Lys His Leu Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val  
 65 70 75 80  
 Ser Ser Ser Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala  
 85 90 95  
 Pro Ser Ser Gly Glu Thr Asp Lys Lys Thr Glu Glu Glu Leu Asp Asn  
 100 105 110  
 Gly Gly Ile Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln  
 115 120 125  
 Asp Ser Leu Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe  
 130 135 140  
 Phe Gly Glu Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn  
 145 150 155 160  
 Gly Gly Ala Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys  
 165 170 175  
 Ser Leu Leu Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val  
 180 185 190  
 Tyr Ala Lys Glu Arg Val Ser Leu Glu Asn Val Thr Glu Ala Thr Phe  
 195 200 205  
 Ser Ser Asn Gly Gly Glu Gln Gly Gly Gly Gly Ile Tyr Ser Glu Gln  
 210 215 220  
 Asp Met Leu Ile Ser Asp Cys Asn Asn Val His Phe Gln Gly Asn Ala  
 225 230 235 240  
 Ala Gly Ala Thr Ala Val Lys Gln Cys Leu Asp Glu Glu Met Ile Val  
 245 250 255  
 Leu Leu Thr Glu Cys Val Asp Ser Leu Ser Glu Asp Thr Leu Asp Ser  
 260 265 270  
 Thr Pro Glu Thr Glu Gln Thr Lys Ser Asn Gly Asn Gln Asp Gly Ser  
 275 280 285



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Thr | Lys | Asp | Thr | Gln | Val | Ser | Glu | Ser | Pro | Glu | Ser | Thr | Pro |
| 290 |     |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ser | Pro | Asp | Asp | Val | Leu | Gly | Lys | Gly | Gly | Gly | Ile | Tyr | Thr | Glu | Lys |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Ser | Leu | Thr | Ile | Thr | Gly | Ile | Thr | Gly | Thr | Ile | Asp | Phe | Val | Ser | Asn |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ile | Ala | Thr | Asp | Ser | Gly | Ala | Gly | Val | Phe | Thr | Lys | Glu | Asn | Leu | Ser |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Cys | Thr | Asn | Thr | Asn | Ser | Leu | Gln | Phe | Leu | Lys | Asn | Ser | Ala | Gly | Gln |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| His | Gly | Gly | Gly | Ala | Tyr | Val | Thr | Gln | Thr | Met | Ser | Val | Thr | Asn | Thr |
| 370 |     |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Thr | Ser | Glu | Ser | Ile | Thr | Thr | Pro | Pro | Leu | Val | Gly | Glu | Val | Ile | Phe |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Ser | Glu | Asn | Thr | Ala | Lys | Gly | His | Gly | Gly | Gly | Ile | Cys | Thr | Asn | Lys |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Leu | Ser | Leu | Ser | Asn | Leu | Lys | Thr | Val | Thr | Leu | Thr | Lys | Asn | Ser | Ala |
|     |     |     |     | 420 |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Lys | Glu | Ser | Gly | Gly | Ala | Ile | Phe | Thr | Asp | Leu | Ala | Ser | Ile | Pro | Thr |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Thr | Asp | Thr | Pro | Glu | Ser | Ser | Thr | Pro | Ser | Ser | Ser | Ser | Pro | Ala | Ser |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Thr | Pro | Glu | Val | Val | Ala | Ser | Ala | Lys | Ile | Asn | Arg | Phe | Phe | Ala | Ser |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Thr | Ala | Glu | Pro | Ala | Ala | Pro | Ser | Leu | Thr | Glu | Ala | Glu | Ser | Asp | Gln |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Thr | Asp | Gln | Thr | Glu | Thr | Ser | Asp | Thr | Asn | Ser | Asp | Ile | Asp | Val | Ser |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ile | Glu | Asn | Ile | Leu | Asn | Val | Ala | Ile | Asn | Gln | Asn | Thr | Ser | Ala | Lys |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Lys | Gly | Gly | Ala | Ile | Tyr | Gly | Lys | Lys | Ala | Lys | Leu | Ser | Arg | Ile | Asn |
| 530 |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Asn | Leu | Glu | Leu | Ser | Gly | Asn | Ser | Ser | Gln | Asp | Val | Gly | Gly | Gly | Leu |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Cys | Leu | Thr | Glu | Ser | Val | Glu | Phe | Asp | Ala | Ile | Gly | Ser | Leu | Leu | Ser |
|     |     |     |     | 565 |     |     |     | 570 |     |     |     |     |     | 575 |     |
| His | Tyr | Asn | Ser | Ala | Ala | Lys | Glu | Gly | Val | Ile | His | Ser | Ser | Lys | Thr |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     | 590 |     |     |     |
| Val | Thr | Leu | Ser | Asn | Leu | Lys | Ser | Thr | Phe | Thr | Phe | Ala | Asp | Asn | Thr |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Val | Lys | Ala | Ile | Val | Glu | Ser | Thr | Pro | Glu | Ala | Pro | Glu | Glu | Ile | Pro |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Pro | Val | Glu | Gly | Glu | Glu | Ser | Thr | Ala | Thr | Glu | Asn | Pro | Asn | Ser | Asn |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Thr | Glu | Gly | Ser | Ser | Ala | Asn | Thr | Asn | Leu | Glu | Gly | Ser | Gln | Gly | Asp |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Thr | Ala | Asp | Thr | Gly | Thr | Gly | Val | Val | Asn | Asn | Glu | Ser | Gln | Asp | Thr |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Ser | Asp | Thr | Gly | Asn | Ala | Glu | Ser | Gly | Glu | Gln | Leu | Gln | Asp | Ser | Thr |
|     |     |     | 675 |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Gln | Ser | Asn | Glu | Glu | Asn | Thr | Leu | Pro | Asn | Ser | Ser | Ile | Asp | Gln | Ser |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Asn | Glu | Asn | Thr | Asp | Glu | Ser | Ser | Asp | Ser | His | Thr | Glu | Glu | Ile | Thr |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Asp | Glu | Ser | Val | Ser | Ser | Ser | Ser | Lys | Ser | Gly | Ser | Ser | Thr | Pro | Gln |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Asp | Gly | Gly | Ala | Ala | Ser | Ser | Gly | Ala | Pro | Ser | Gly | Asp | Gln | Ser | Ile |

[illegible]

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<211> 525
<212> PRT
<213> Chlamydia
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| <400> | 196 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met   | His | His | His | His | His | His | Thr | Ala | Ala | Ser | Asp | Asn | Phe | Gln | Leu |
| 1     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser   | Gln | Gly | Gly | Gln | Gly | Phe | Ala | Ile | Pro | Ile | Gly | Gln | Ala | Met | Ala |
|       |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ile   | Ala | Gly | Gln | Ile | Lys | Leu | Pro | Thr | Val | His | Ile | Gly | Pro | Thr | Ala |
|       |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Phe   | Leu | Gly | Leu | Gly | Val | Val | Asp | Asn | Asn | Gly | Asn | Gly | Ala | Arg | Val |
|       | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gln   | Arg | Val | Val | Gly | Ser | Ala | Pro | Ala | Ala | Ser | Leu | Gly | Ile | Ser | Thr |
| 65    |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Gly   | Asp | Val | Ile | Thr | Ala | Val | Asp | Gly | Ala | Pro | Ile | Asn | Ser | Ala | Thr |
|       |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala   | Met | Ala | Asp | Ala | Leu | Asn | Gly | His | His | Pro | Gly | Asp | Val | Ile | Ser |
|       |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Val   | Thr | Trp | Gln | Thr | Lys | Ser | Gly | Gly | Thr | Arg | Thr | Gly | Asn | Val | Thr |
|       |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Leu   | Ala | Glu | Gly | Pro | Pro | Ala | Glu | Phe | Pro | Leu | Val | Pro | Arg | Gly | Ser |
|       | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Pro   | Leu | Pro | Val | Gly | Asn | Pro | Ala | Glu | Pro | Ser | Leu | Leu | Ile | Asp | Gly |
| 145   |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     | 160 |     |
| Thr   | Met | Trp | Glu | Gly | Ala | Ser | Gly | Asp | Pro | Cys | Asp | Pro | Cys | Ala | Thr |
|       |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Trp   | Cys | Asp | Ala | Ile | Ser | Ile | Arg | Ala | Gly | Tyr | Tyr | Gly | Asp | Tyr | Val |
|       |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Phe   | Asp | Arg | Val | Leu | Lys | Val | Asp | Val | Asn | Lys | Thr | Phe | Ser | Gly | Met |
|       |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ala   | Ala | Thr | Pro | Thr | Gln | Ala | Ile | Gly | Asn | Ala | Ser | Asn | Thr | Asn | Gln |
|       | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Pro   | Glu | Ala | Asn | Gly | Arg | Pro | Asn | Ile | Ala | Tyr | Gly | Arg | His | Met | Gln |
| 225   |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Asp   | Ala | Glu | Trp | Phe | Ser | Asn | Ala | Ala | Phe | Leu | Ala | Leu | Asn | Ile | Trp |
|       |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Asp   | Arg | Phe | Asp | Ile | Phe | Cys | Thr | Leu | Gly | Ala | Ser | Asn | Gly | Tyr | Phe |
|       |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Lys   | Ala | Ser | Ser | Ala | Ala | Phe | Asn | Leu | Val | Gly | Leu | Ile | Gly | Phe | Ser |
|       |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ala   | Ala | Ser | Ser | Ile | Ser | Thr | Asp | Leu | Pro | Met | Gln | Leu | Pro | Asn | Val |
|       | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Gly   | Ile | Thr | Gln | Gly | Val | Val | Glu | Phe | Tyr | Thr | Asp | Thr | Ser | Phe | Ser |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 305 |     | 310 |     | 315 |     | 320 |     |     |     |     |     |     |     |     |     |
| Trp | Ser | Val | Gly | Ala | Arg | Gly | Ala | Leu | Trp | Glu | Cys | Gly | Cys | Ala | Thr |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Leu | Gly | Ala | Glu | Phe | Gln | Tyr | Ala | Gln | Ser | Asn | Pro | Lys | Ile | Glu | Met |
|     |     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |
| Leu | Asn | Val | Thr | Ser | Ser | Pro | Ala | Gln | Phe | Val | Ile | His | Lys | Pro | Arg |
|     |     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |
| Gly | Tyr | Lys | Gly | Ala | Ser | Ser | Asn | Phe | Pro | Leu | Pro | Ile | Thr | Ala | Gly |
|     |     |     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |
| Thr | Thr | Glu | Ala | Thr | Asp | Thr | Lys | Ser | Ala | Thr | Ile | Lys | Tyr | His | Glu |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 400 |
| Trp | Gln | Val | Gly | Leu | Ala | Leu | Ser | Tyr | Arg | Leu | Asn | Met | Leu | Val | Pro |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 415 |
| Tyr | Ile | Gly | Val | Asn | Trp | Ser | Arg | Ala | Thr | Phe | Asp | Ala | Asp | Thr | Ile |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 430 |
| Arg | Ile | Ala | Gln | Pro | Lys | Leu | Lys | Ser | Glu | Ile | Leu | Asn | Ile | Thr | Thr |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 445 |
| Trp | Asn | Pro | Ser | Leu | Ile | Gly | Ser | Thr | Thr | Ala | Leu | Pro | Asn | Asn | Ser |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 460 |
| Gly | Lys | Asp | Val | Leu | Ser | Asp | Val | Leu | Gln | Ile | Ala | Ser | Ile | Gln | Ile |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 480 |
| Asn | Lys | Met | Lys | Ser | Arg | Lys | Ala | Cys | Gly | Val | Ala | Val | Gly | Ala | Thr |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 495 |
| Leu | Ile | Asp | Ala | Asp | Lys | Trp | Ser | Ile | Thr | Gly | Glu | Ala | Arg | Leu | Ile |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 510 |
| Asn | Glu | Arg | Ala | Ala | His | Met | Asn | Ala | Gln | Phe | Arg | Phe |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 525 |

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43

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<400> 199  
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6

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 tgcaatcatg aaaaaagcgt ttttcttttt c 31  
  
 <210> 204  
 <211> 31  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 204  
 cagaacgcgt ctagaatcgc agagcaattt c 31  
  
 <210> 205  
 <211> 30  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 205  
 gtgcaatcat gattcctcaa ggaatttacg 30  
  
 <210> 206  
 <211> 31  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 206  
 cagaacgcgt ttagaaccgg actttacttc c 31  
  
 <210> 207  
 <211> 50  
 <212> DNA  
 <213> Chlamydia  
  
 <400> 207

cagacatatg catcaccatc accatcacga ggcgagctcg atccaagatc 50

<210> 208  
 <211> 40  
 <212> DNA  
 <213> Chlamydia

<400> 208  
 cagaggtacc tcagatagca ctctctccta ttaaagtagg 40

<210> 209  
 <211> 55  
 <212> DNA  
 <213> Chlamydia

<400> 209  
 cagagctagc atgcatcacc atcaccatca cgtaaagatt gagaacttct ctggc 55

<210> 210  
 <211> 35  
 <212> DNA  
 <213> Chlamydia

<400> 210  
 cagaggtacc ttagaatgtc atacgagcac cgcag 35

<210> 211  
 <211> 36  
 <212> DNA  
 <213> Chlamydia

<400> 211  
 cagacatatg catcaccatc accatcacgg gttagc 36

<210> 212  
 <211> 35  
 <212> DNA  
 <213> Chlamydia

<400> 212  
 cagaggtacc tcagctctc cagcacactc tcttc 35

<210> 213  
 <211> 51  
 <212> DNA  
 <213> Chlamydia

<400> 213  
 cagagctagc catcaccatc accatcacgg tgctatttct tgcttacgtg g 51

<210> 214  
 <211> 38  
 <212> DNA  
 <213> Chlamydia

<400> 214  
 cagaggtact taaaagatca atcgcaatcc agtattcg 38

<210> 215  
 <211> 48  
 <212> DNA  
 <213> Chlamydia

<400> 215  
 cagaggatcc acatcacat caccatcacg gactagctag agaggttc 48

<210> 216  
 <211> 31  
 <212> DNA  
 <213> Chlamydia

<400> 216  
 cagagaattc ctagaatcgc agagcaattt c 31

<210> 217  
 <211> 7  
 <212> DNA  
 <213> Chlamydia

<400> 217  
 tgcaatc 7

<210> 218  
 <211> 22  
 <212> PRT  
 <213> Chlamydia

<400> 218  
 Met Ala Ser Met Thr Gly Gly Gln Gln Met Gly Arg Asp Ser Ser Leu  
 1 5 10 15  
 Val Pro Ser Ser Asp Pro  
 20

<210> 219  
 <211> 51  
 <212> DNA  
 <213> Chlamydia

<400> 219  
 cagaggatcc gcatcacat caccatcaca tgattcctca aggaatttac g 51

<210> 220  
 <211> 33  
 <212> DNA  
 <213> Chlamydia

<400> 220  
 cagagcggcc gcttagaacc ggactttact tcc 33

<210> 221  
 <211> 24  
 <212> PRT  
 <213> Chlamydia

<400> 221

Met Ala Ser Met Thr Gly Gly Gln Gln Asn Gly Arg Asp Ser Ser Leu  
1 5 10 15

Val Pro His His His His His  
20

<210> 222

<211> 46

<212> DNA

<213> Chlamydia

<400> 222

cagagctagc catcaccatc accatcacct ctttggccag gatccc

46

<210> 223

<211> 30

<212> DNA

<213> Chlamydia

<400> 223

cagaactagt ctagaacctg taagtgtcc

30

<210> 224

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 224

Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro Val Asn Ile  
1 5 10 15

Ser Thr Asp Leu  
20

<210> 225

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 225

Lys Asn Ser Ala Phe Met His Pro Val Asn Ile Ser Thr Asp Leu Ala  
1 5 10 15

Val Ile Val Gly  
20

<210> 226

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 226

His Pro Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly  
 1 - - - - 5 - - - - 10 - - - - 15 -  
 Pro Met Pro Arg  
 20

<210> 227

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 227

Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr  
 1 - - - - 5 - - - - 10 - - - - 15 -  
 Glu Ile Val Lys  
 20

<210> 228

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 228

Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys  
 1 - - - - 5 - - - - 10 - - - - 15 -  
 Val Trp Glu Tyr  
 20

<210> 229

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 229

Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile  
 1 - - - - 5 - - - - 10 - - - - 15 -  
 Lys Lys His Asn  
 20

<210> 230

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab



&lt;400&gt; 230

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Lys | Lys | His | Asn | Cys | Gln | Asp | Gln | Lys | Asn | Lys | Arg | Asn | Ile | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|-----|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| Pro | Asp | Ala | Asn |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     |     | 20  |  |  |  |  |  |  |  |  |  |  |  |  |

&lt;210&gt; 231

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 231

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Cys | Gln | Asp | Gln | Lys | Asn | Lys | Arg | Asn | Ile | Leu | Pro | Asp | Ala | Asn |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|-----|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| Leu | Ala | Lys | Val |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     |     | 20  |  |  |  |  |  |  |  |  |  |  |  |  |

&lt;210&gt; 232

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 232

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Asn | Lys | Arg | Asn | Ile | Leu | Pro | Asp | Ala | Asn | Leu | Ala | Lys | Val | Phe |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|-----|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| Gly | Ser | Ser | Asp |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     |     | 20  |  |  |  |  |  |  |  |  |  |  |  |  |

&lt;210&gt; 233

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 233

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Pro | Asp | Ala | Asn | Leu | Ala | Lys | Val | Phe | Gly | Ser | Ser | Asp | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|-----|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|
| Ile | Asp | Met | Phe |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     |     | 20  |  |  |  |  |  |  |  |  |  |  |  |  |

&lt;210&gt; 234

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 234

Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln  
 1 5 10 15  
 Met Thr Lys Ala  
 20

<210> 235  
 <211> 22  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 235  
 Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met Thr Lys Ala Leu  
 1 5 10 15  
 Ser Lys His Ile Val Lys  
 20

<210> 236  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 236  
 Val Glu Ile Thr Gln Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro  
 1 5 10 15  
 Tyr Pro Val Glu  
 20

<210> 237  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 237  
 Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile  
 1 5 10 15  
 Thr Ala Thr Gly  
 20

<210> 238  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 238  
 Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys

1                      5                      10                      15  
 Arg Asp Cys Val  
                     20  
  
 <210> 239  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Made in a lab  
  
 <400> 239  
 Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp  
   1                      5                      10                      15  
 Val Ile Ile Thr  
                     20  
  
 <210> 240  
 <211> 21  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Made in a lab  
  
 <400> 240  
 Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln  
   1                      5                      10                      15  
 Gln Leu Pro Cys Glu  
                     20  
  
 <210> 241  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Made in a lab  
  
 <400> 241  
 Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu  
   1                      5                      10                      15  
 Ala Glu Phe Val  
                     20  
  
 <210> 242  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Made in a lab  
  
 <400> 242  
 Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg  
   1                      5                      10                      15

Ser Asp Pro Ala  
20

<210> 243  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 243  
Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala  
1 5 10 15  
Thr Thr Pro Thr  
20

<210> 244  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 244  
Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala  
1 5 10 15  
Asp Gly Lys Leu  
20

<210> 245  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 245  
Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val  
1 5 10 15  
Trp Lys Ile Asp  
20

<210> 246  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 246  
Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg  
1 5 10 15  
Leu Gly Gln Gly

20

<210> 247  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 247  
 Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu  
 1 5 10 15  
 Lys Ser Lys Ile  
 20

<210> 248  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 248  
 Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr  
 1 5 10 15  
 Val Trp Val Lys  
 20

<210> 249  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 249  
 Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro  
 1 5 10 15  
 Leu Lys Glu Gly  
 20

<210> 250  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 250  
 Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
 1 5 10 15  
 Cys Cys Phe Thr  
 20

<210> 251  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 251  
 Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
 1 5 10 15

<210> 252  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 252  
 Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
 1 5 10

<210> 253  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 253  
 Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
 1 5 10 15

<210> 254  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Made in a lab

<400> 254  
 Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala  
 1 5 10 15  
 Phe Gly Val Leu  
 20

<210> 255  
 <211> 20  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Made in a lab

<400> 255

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- - - - - Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn
            1           5           10           15
Pro Glu Gly Ser
            20

```

<210> 256

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 256

```

Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu
            1           5           10           15
Ala Leu Arg Ala
            20

```

<210> 257

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 257

```

Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr
            1           5           10           15
Phe Leu Ile Asp
            20

```

<210> 258

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 258

```

Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys
            1           5           10           15
His Gly Val Ile
            20

```

<210> 259

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 259

```

Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg
 1         5         10        15
His Ala Val Ile
                20

```

<210> 260

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 260

```

Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn
 1         5         10        15
Asp Leu Pro Leu
                20

```

<210> 261

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 261

```

Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly
 1         5         10        15
Arg Ser Ile Asp
                20

```

<210> 262

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 262

```

Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu
 1         5         10        15
Glu Leu Arg Ile
                20

```

<210> 263

<211> 897

<212> DNA

<213> Chlamydia

<220>

<221> misc\_feature

<222> (1)...(897)



<223> n = A,T,C or G

<400> 263

|            |            |             |            |             |            |     |
|------------|------------|-------------|------------|-------------|------------|-----|
| atggcttcta | tatgcggaag | tttaggggtct | ggtaeaggga | -atgctctaaa | agcttttttt | 60  |
| acacagccca | acaataaaat | ggcaagggtg  | gtaaataaga | cgaaggaggt  | ggataagact | 120 |
| attaagggtg | ccaagtctgc | tgccgaattg  | accgcaaata | ttttggaaca  | agctggaggc | 180 |
| gcgggtcttt | ccgcacacat | tacagcttcc  | caagtgtcca | aaggattagg  | ggatgcgaga | 240 |
| actgttgctg | ctttaggga  | tgcctttaac  | ggagcggttg | caggaacagt  | tcaaagtgcg | 300 |
| caaagcttct | tctctcacat | gaaagctgct  | agtcagaaaa | cgcaagaagg  | ggatgagggg | 360 |
| ctcacagcag | atctttgtgt | gtctcataag  | cgcagagcgg | ctgcggctgt  | ctgtagcatc | 420 |
| atcgaggaga | ttacctacct | cgcgacattc  | ggagctatcc | gtccgattct  | gtttgtcaac | 480 |
| aaaatgctgg | caaaaccggt | tctttcttcc  | caaactaaag | caaatatggg  | atcttctggt | 540 |
| agctatatta | tggcgggcta | ccatgcagcg  | tctgtggtgg | gtgctggact  | cgctatcagt | 600 |
| gcgnaaagag | cagattgcga | agcccgtctg  | gctcgtattg | cgagagaaga  | gtcgttactc | 660 |
| gaagtgccgg | gagaggaaaa | tgcttgcgag  | aagaaagtcg | ctggagagaa  | agccaagacg | 720 |
| ttcacgcgca | tcaagtatgc | actcctcact  | atgctcgaga | agtttttgga  | atgcgttgcc | 780 |
| gacgttttca | aattggtgcc | gctgcctatt  | acaatgggta | tctcgtcgat  | tgtggctgct | 840 |
| ggatgtacgt | tcacttctgc | aattattgga  | ttgtgcactt | tctgcgccag  | agcataa    | 897 |

<210> 264

<211> 298

<212> PRT

<213> Chlamydia

<220>

<221> VARIANT

<222> (1)...(298)

<223> Xaa = Any Amino Acid

<400> 264

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Ser | Ile | Cys | Gly | Arg | Leu | Gly | Ser | Gly | Thr | Gly | Asn | Ala | Leu |  |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |  |
| Lys | Ala | Phe | Phe | Thr | Gln | Pro | Asn | Asn | Lys | Met | Ala | Arg | Val | Val | Asn |  |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |     |  |
| Lys | Thr | Lys | Gly | Val | Asp | Lys | Thr | Ile | Lys | Val | Ala | Lys | Ser | Ala | Ala |  |
|     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |     |     |  |
| Glu | Leu | Thr | Ala | Asn | Ile | Leu | Gln | Ala | Gly | Gly | Ala | Gly | Ser | Ser |     |  |
|     | 50  |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |     |  |
| Ala | His | Ile | Thr | Ala | Ser | Gln | Val | Ser | Lys | Gly | Leu | Gly | Asp | Ala | Arg |  |
| 65  |     |     |     | 70  |     |     |     | 75  |     |     |     |     |     | 80  |     |  |
| Thr | Val | Val | Ala | Leu | Gly | Asn | Ala | Phe | Asn | Gly | Ala | Leu | Pro | Gly | Thr |  |
|     |     |     | 85  |     |     | 90  |     |     |     |     |     |     | 95  |     |     |  |
| Val | Gln | Ser | Ala | Gln | Ser | Phe | Phe | Ser | His | Met | Lys | Ala | Ala | Ser | Gln |  |
|     |     | 100 |     |     |     | 105 |     |     |     |     |     | 110 |     |     |     |  |
| Lys | Thr | Gln | Glu | Gly | Asp | Glu | Gly | Leu | Thr | Ala | Asp | Leu | Cys | Val | Ser |  |
|     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |  |
| His | Lys | Arg | Arg | Ala | Ala | Ala | Val | Cys | Ser | Ile | Ile | Gly | Gly | Ile |     |  |
|     | 130 |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |     |  |
| Thr | Tyr | Leu | Ala | Thr | Phe | Gly | Ala | Ile | Arg | Pro | Ile | Leu | Phe | Val | Asn |  |
| 145 |     |     |     | 150 |     |     |     | 155 |     |     |     |     |     | 160 |     |  |
| Lys | Met | Leu | Ala | Lys | Pro | Phe | Leu | Ser | Ser | Gln | Thr | Lys | Ala | Asn | Met |  |
|     |     | 165 |     |     |     | 170 |     |     |     |     |     |     |     | 175 |     |  |
| Gly | Ser | Ser | Val | Ser | Tyr | Ile | Met | Ala | Ala | Asn | His | Ala | Ala | Ser | Val |  |
|     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |     |  |
| Val | Gly | Ala | Gly | Leu | Ala | Ile | Ser | Ala | Xaa | Arg | Ala | Asp | Cys | Glu | Ala |  |
|     | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |  |
| Arg | Cys | Ala | Arg | Ile | Ala | Arg | Glu | Glu | Ser | Leu | Leu | Glu | Val | Pro | Gly |  |

```

      210              215              220
Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr
225              230              235              240
- - - - - Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu -
      245              250              255
Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met
      260              265              270
Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile
      275              280              285
Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala
      290              295

```

&lt;210&gt; 265

&lt;211&gt; 897

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (1)...(897)

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 265

```

atggccttcta tatgcggacg tttaggggtct ggtacaggga atgctctaaa agcttttttt 60
acacagccca acaataaaat ggcaagggta gtaaataaga cgaagggaat ggataagact 120
attaaggttg ccaagtctgc tgccgaattg accgcaaata ttttgaaca agctggaggc 180
gcggtctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
actgttgctg ctttagggaa tgcctttaac ggagcgttgc caggaacagt tcaaagtgcg 300
caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
ctcacagcag atcttttgtgt gtctcataag cgcagagcgg ctgcggtgt ctgtagcatc 420
atcggaggaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgtcaac 480
aaaatgctgg caaaaccgtt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
agctatatta tggcggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
gcgnaaagag cagattgcga agcccgtgc gctcgtattg cgagagaaga gtcgttactc 660
gaagtgccgg gagaggaaaa tgcttgcgag aagaaagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780
gacgttttca aattggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840
ggatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

```

&lt;210&gt; 266

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Chlamydia

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; (1)...(298)

&lt;223&gt; Xaa = Any Amino Acid

&lt;400&gt; 266

```

Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu
 1              5              10              15
Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn
      20              25              30
Lys Thr Lys Gly Met Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala
      35              40              45
Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser

```

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 50  | Ala | His | Ile | Thr | Ala | Ser | Gln | Val | Ser | Lys | Gly | Leu | Gly | Asp | Ala | Arg |
| 65  | Thr | Val | Val | Ala | Leu | Gly | Asn | Ala | Phe | Asn | Gly | Ala | Leu | Pro | Gly | Thr |
| 85  | Val | Gln | Ser | Ala | Gln | Ser | Phe | Phe | Ser | His | Met | Lys | Ala | Ala | Ser | Gln |
| 100 | Lys | Thr | Gln | Glu | Gly | Asp | Glu | Gly | Leu | Thr | Ala | Asp | Leu | Cys | Val | Ser |
| 115 | His | Lys | Arg | Arg | Ala | Ala | Ala | Ala | Val | Cys | Ser | Ile | Ile | Gly | Gly | Ile |
| 130 | Thr | Tyr | Leu | Ala | Thr | Phe | Gly | Ala | Ile | Arg | Pro | Ile | Leu | Phe | Val | Asn |
| 145 | Lys | Met | Leu | Ala | Lys | Pro | Phe | Leu | Ser | Ser | Gln | Thr | Lys | Ala | Asn | Met |
| 165 | Gly | Ser | Ser | Val | Ser | Tyr | Ile | Met | Ala | Ala | Asn | His | Ala | Ala | Ser | Val |
| 180 | Val | Gly | Ala | Gly | Leu | Ala | Ile | Ser | Ala | Xaa | Arg | Ala | Asp | Cys | Glu | Ala |
| 195 | Arg | Cys | Ala | Arg | Ile | Ala | Arg | Glu | Glu | Ser | Leu | Leu | Glu | Val | Pro | Gly |
| 210 | Glu | Glu | Asn | Ala | Cys | Glu | Lys | Lys | Val | Ala | Gly | Glu | Lys | Ala | Lys | Thr |
| 225 | Phe | Thr | Arg | Ile | Lys | Tyr | Ala | Leu | Leu | Thr | Met | Leu | Glu | Lys | Phe | Leu |
| 245 | Glu | Cys | Val | Ala | Asp | Val | Phe | Lys | Leu | Val | Pro | Leu | Pro | Ile | Thr | Met |
| 260 | Gly | Ile | Arg | Ala | Ile | Val | Ala | Ala | Gly | Cys | Thr | Phe | Thr | Ser | Ala | Ile |
| 275 | Ile | Gly | Leu | Cys | Thr | Phe | Cys | Ala | Arg | Ala |     |     |     |     |     |     |
| 290 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 267  
 <211> 680  
 <212> DNA  
 <213> Chlamydia

|  |     |
|--|-----|
| <400> 267  |     |
| tctatatcca tattgatagg aaaaaacgtc gcagaaagat tttagctatg acgtttatcc  | 60  |
| gagcttttagg atattcaaca gatgcagata ttattgaaga gttcttttct gtagaggagc | 120 |
| gttccttacg ttcagagaag gattttgtcg cgttagttag taaagtttta gctgataacg  | 180 |
| tagttgatgc ggattcttca ttagtttacg ggaaagctgg agagaagcta agtactgcta  | 240 |
| tgctaaaacg catcttagat acgggagtc aatctttgaa gattgctggt gccgcagatg   | 300 |
| aaaatcacc aattattaag atgctcgcaa aagatcctac ggattcttac gaagctgctc   | 360 |
| ttaaagattt ttatcgacaga ttacgaccag gagagcctgc aactttagct aatgctcgat | 420 |
| ccacaattat gcgtttattc ttcgatgcta aacgttataa tttaggccgc gttggacggt  | 480 |
| ataaattaaa taaaaaatta ggcttcccat tagacgacga aacattatct caagtgactt  | 540 |
| tgagaaaaga agatgttatc gccgcgttga aatatttgat tcgtttgcca atgggcgatg  | 600 |
| agaagacatc tatcgatgat attgaccatt tggcaaacgc acgagttcgc tctgttgag   | 660 |
| aactaattca gaatcactgt  | 680 |

<210> 268  
 <211> 359  
 <212> DNA  
 <213> Chlamydia

<400> 268

```

cttatgttct ggagaatggt gcaacaacat attaatcgaa ccagctcctc ctagtaacat      60
agaaaccaag cccttttgag aaaaaacctg tacttcgcat ccttttagcca ttgtttgaat    120
agctcctaac aaagagctaa ttttttcctc ttccttggtt ttctgaggcg ctgtggactc    180
taaatatagc aagtgtctct ggaacacctc atcaacaatc gcttgtccta gattagggtat    240
agagactgtc tctccatcaa ttaaattggag tttcaaagta atatccctt ccgtccctcc    300
atcacaagac tctatgaaag ctatctgatt ccacgcagca gaaatgtatg gggaaatac    359

```

<210> 269  
 <211> 124  
 <212> DNA  
 <213> Chlamydia

```

<400> 269
gatcgaatc attgagggag ctcatthaaca agaataagctg cagtttcttt gcgttcttct      60
ggaataacaa gaaataggta atcgggtacca ttgatagaac gaacacgaca aatcgcagaa    120
ggtt                                           124

```

<210> 270  
 <211> 219  
 <212> DNA  
 <213> Chlamydia

```

<400> 270
gatcctgttg ggcctagtaa taatacgttg gatttcccat aactcacttg tttatcctgc      60
ataagagcac ggatacgctt atagtgggta tagacggcaa ccgaaatcgt ttttttcgcg    120
cgctcttgtc caatgacata agagtcgatg tggcgtttga tttcttttagg ggtaaacact    180
ctcagacttg ttggagagct tgtggaagat gttgcgatc                               219

```

<210> 271  
 <211> 511  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> misc\_feature  
 <222> (1)...(511)  
 <223> n = A,T,C or G

```

<400> 271
ggatccgaat tcggcacgag gagaaaatat aggaggttcc akcatcggaa gatctaatag      60
acaaagaggt ttggcatag atggctcctc cttgtacgtt caacgatgat tgggagggat    120
tgttatcgat agcttggttc ccagagaact gacaagtccc gctacattga gagaatgtaa    180
cctgttctcc atagatagct cctcctacta cacctgaata agttgggtgtt gctggagatg    240
atggtgcggc tgctgcggct gcttgtaggg aagcagcagc tgcagcaggt gctgaagctg    300
ttgttgcgac tcctgtggat gaggagtttg ctttgttggt cgagaaagag aagcctgatt    360
tcagattaga aatattttaca gtttttagcat gtaagcctcc accttctttc ccaacaaggt    420
tctctgttac agataaggag actagangca tctagtttta aagatttttt acagcagata    480
cctccaccta tctctgtage ggagttctca g                                           511

```

<210> 272  
 <211> 598  
 <212> DNA  
 <213> Chlamydia

```

<400> 272
ctcttctctt cctcaatcta gttctggagc aactacagtc tccgactcag gagactctag      60
ctctggctca aactcggata cctcaaaaac agttccagtc acagctaaag gcggtgggct    120

```

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| ttatactgat | aagaatcttt | cgattactaa | catcacagga | attatcgaaa | ttgcaaataa | 180 |
| caaagcgaca | gatgttggag | gtggtgctta | cgtaaaagga | acccttactt | gtaaaaactc | 240 |
| tcaccgtcta | caatttttga | aaaactcttc | cgataaacia | ggtggaggaa | tctacggaga | 300 |
| agacaacatc | accctatcta | atttgacagg | gaagactcta | ttccaagaga | atactgccaa | 360 |
| aaaagagggc | ggtggactct | tcataaaagg | tacagataaa | gctcttaca  | tgacaggact | 420 |
| ggatagtttc | tgtttaatta | ataacacatc | agaaaaacat | ggtggtggga | gcctttgtta | 480 |
| ccaaagaaat | ctctcagact | tacacctctt | gatgtggaaa | caattccagg | aatcacgcct | 540 |
| gtacatggtg | aaacagtcac | tactggcaat | aaatctacag | gaggtaatgg | tggagggc   | 598 |

&lt;210&gt; 273

&lt;211&gt; 126

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 273

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| ggatccgaat | tcggcacgag | atgagcctta | tagtttaaca | aaagcttctc | acattccttc | 60  |
| gatagctttt | tattagccgt | ttttagcctc | ctaagagat  | ctcctcggtc | gtaacaaata | 120 |
| cgagag     |            |            |            |            |            | 126 |

&lt;210&gt; 274

&lt;211&gt; 264

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 274

|            |            |            |             |            |            |     |
|------------|------------|------------|-------------|------------|------------|-----|
| ggatccgaat | tcggcacgag | ctctttttaa | tcttaattac  | aaaaagacaa | attaattcaa | 60  |
| tttttcaaaa | aagaatttaa | acattaattg | ttgtaaaaaa  | acaatattta | ttctaaaata | 120 |
| ataaccatag | ttacggggga | atctctttca | tggtttatatt | tagagctcat | caacctaggc | 180 |
| atagccttaa | aacattttct | ttgaaagttc | accattcggt  | ctccgataag | catcctcaaa | 240 |
| ttgctaaagc | tatgtggatt | acgg       |             |            |            | 264 |

&lt;210&gt; 275

&lt;211&gt; 359

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 275

|             |            |            |             |            |            |     |
|-------------|------------|------------|-------------|------------|------------|-----|
| ggatccgaat  | tcggcacgag | ataaaacctg | aaccacaaca  | aagatctaaa | acttcttgat | 60  |
| tttcagctgc  | aaattctttt | agataaatat | caaccatttc  | ttcagtttca | tatcttggaa | 120 |
| ttaaaacttg  | ttctctttaa | ttaattctag | tattttaagta | ttcaacatag | cccattatta | 180 |
| attgaattgg  | ataattttgc | cttaataatt | cacattcttt  | ttcagtaatt | ttaggttcta | 240 |
| aaccgtaccg  | ctttttttct | aaaattaatg | tttcttcatt  | attcatttta | taagccactt | 300 |
| tcctttatatt | tttgattttg | ttcttctggt | agtaatgctt  | caataatagt | taataattt  | 359 |

&lt;210&gt; 276

&lt;211&gt; 357

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 276

|            |             |            |             |            |            |     |
|------------|-------------|------------|-------------|------------|------------|-----|
| aaaacaattg | atataatttt  | ttttttcata | acttccagac  | tcctttctag | aaaagtcttt | 60  |
| atgggtagta | gtgactctaa  | cgttttttat | tattaagacg  | atccccggag | atccttttaa | 120 |
| tgatgaaaac | ggaaacatcc  | tttcgccaga | aacttttagca | ctattaaaga | atcgttacgg | 180 |
| gttagataag | cctttattca  | cccagtatct | tatctatttg  | aatgtctctg | taacactaga | 240 |
| tttcggggaa | tctcttatct  | acaaagatcg | aaatctcagc  | attattgctg | ccgctcttcc | 300 |
| atcttccgct | attctttggac | ttgaaagctt | gtgtttactc  | gtgccgaatt | cggatcc    | 357 |

<210> 277  
 <211> 505  
 <212> DNA  
 <213> Chlamydia

<400> 277  
 ggatccgaat tcggcacgag ctctgtgccga ttgcttgctt cagtcacccc atcggatatag 60  
 agcactaaaa gagactcctc ttcaagaacg agagtgtgag caggggtgagg aggaacttca 120  
 ggtaaaaatc ctaaggccat accaggatgc gacaggaaag agatatctcc attaggagct 180  
 cggagacacg ctgggttgtg gccacaagaa tagtattcta gttctcgtgt tgcgtaatga 240  
 taacaataaa tgcatagtgt tacaacatc ccagattcag ctgtctgttg atagaagaga 300  
 gcagctgttt gttgaacggc ttcttgaata gaggagagct cactcaaaaa ggtatgtaac 360  
 atgtttttca ggaataagga gtaggcgcac gcattgactc ctttcccggg agcatcagca 420  
 acgattagaa agagtttagc ttggggacct tcgcctataa caaagatatc aaagaaatct 480  
 cctctaccg taactgcagg aatat 505

<210> 278  
 <211> 407  
 <212> DNA  
 <213> Chlamydia

<400> 278  
 ggatccgaat tcggcacgag aactactgag caaattgggt atccaacttc ctctttacga 60  
 aagaaaaaca gaaggcattc tccataccaa gatttggtgc atcgacaata aaactccaat 120  
 ctttggctct gctaactgga gcgggtgctgg tatgattaaa aactttgaag acctattcat 180  
 ccttcgcccc attacagaga cacagcttca ggcccttatg gacgtctggg ctcttctaga 240  
 aacaaatagc tcctatctgt ccccagagag cgtgcttacg gccctactc cttcaagtag 300  
 acctactcaa caagatacag attctgatga cgaacaaccg agtaccagcc agcaagctat 360  
 ccgtatgaga aaataggatt agggaaacaa aacgacagca aaccaca 407

<210> 279  
 <211> 351  
 <212> DNA  
 <213> Chlamydia

<400> 279  
 ctctgtgccg ttacaggagg ctctgtatcct ttaaaataga gtttttctta tgaccccatg 60  
 tggcgatagg ccgggtctag cgccgatagt agaaatatcg gttgggtttt gtccttgagg 120  
 ggatcgata ctttttcaaa gtatgggtccc cgtatcgatt atctggaggc tcttatgtct 180  
 ttttttcata ctagaaaata taagcttacc ctacaggagc tcttgtgttt agcaggctgt 240  
 ttcttaatga acagctgttc ctctagtcca ggaaatcaac ccgctgatga gagcatctat 300  
 gtcttgtcta tgaatcgcat gatttgtgat tctctgtgccg aattcggatc c 351

<210> 280  
 <211> 522  
 <212> DNA  
 <213> Chlamydia

<400> 280  
 ggatccgaat tcggcacgag cagaggaaaa aggcgatact cctcttgaag atcgtttcac 60  
 agaagatctt tccgaagtct ctggagaaga ttttcgagga ttgaaaaatt cgttcgatga 120  
 tgattcttct tctgacgaaa ttctcgatgc gtcacaagt aaattttctg atcccacaat 180  
 aaaggatcta gctcttgatt atctaattca aatagctccc tctgatggga aacttaagtc 240  
 cgctctcatt caggcaaagc atcaactgat gagccagaat cctcaggcga ttgttggagg 300  
 acgcaatgtt ctgttagctt cagaaacctt tgcttcaga gcaaatacat ctcttcac 360  
 gcttcgctcc ttatatctcc aagtaacctc atccccctct aattgcgcta atttacatca 420  
 aatgcttgct tcttactcgc catcagagaa aaccgctgtt atggagtctt tagtgaatgg 480

catggtagca gatttaaaat cggagggccc ttccattcct cc

522

<210> 281

<211> 577

<212> DNA

<213> Chlamydia

<400> 281

|             |             |             |            |            |            |     |
|-------------|-------------|-------------|------------|------------|------------|-----|
| ggatccgaat  | tcggcacgag  | atgcttctat  | tacaattggt | ttggatgcgg | aaaaagctta | 60  |
| ccagcttatt  | ctagaaaagt  | tgggagatca  | aattcttggt | ggaattgctg | atactattgt | 120 |
| tgatagtaca  | gtccaagata  | ttttagacaa  | aatcacaaca | gacccttctc | taggtttggt | 180 |
| gaaagctttt  | aacaactttc  | caatcactaa  | taaaattcaa | tgcaacgggt | tattcactcc | 240 |
| caggaacatt  | gaaactttat  | taggaggaac  | tgaaatagga | aaattcacag | tcacacccaa | 300 |
| aagctctggg  | agcatgttct  | tagtctcagc  | agatattatt | gcatcaagaa | tggaaggcgg | 360 |
| cgttggtcta  | gctttgggtac | gagaagggtga | ttctaagccc | tacgcgatta | gttatggata | 420 |
| ctcatcaggc  | gttcctaatt  | tatgtagtct  | aagaaccaga | attattaata | caggattgac | 480 |
| tccgacaacg  | tattcattac  | gtgtaggcgg  | tttagaaagc | ggtgtggtat | gggttaatgc | 540 |
| cctttctaata | ggcaatgata  | ttttaggaat  | aacaaat    |            |            | 577 |

<210> 282

<211> 607

<212> DNA

<213> Chlamydia

<400> 282

|             |            |             |             |            |            |     |
|-------------|------------|-------------|-------------|------------|------------|-----|
| actmatcttc  | cccgggctcg | agtgcggccg  | caagcttgctc | gacggagctc | gatacaaaaa | 60  |
| tgtgtgcgtg  | tgaaccgctt | cttcaaaaagc | ttgtcttaaa  | agatattgtc | tcgcttccgg | 120 |
| attagttaca  | tgtttaaaaa | ttgctagaac  | aattattattc | ccaaccaagc | tctctgcggg | 180 |
| gctgaaaaaa  | cctaaattca | aaagaatgac  | tcgccgctca  | tcttcagaaa | gacgatccga | 240 |
| cttcacataat | tcgatgtctt | tccccatggg  | gatctctgta  | gggagccagt | tatttgcgca | 300 |
| gccattcaaa  | taatgttccc | aagcccattt  | gtacttaata  | ggaacaagtt | ggttgacatc | 360 |
| gacctgggtg  | cagttcacta | gacgcttgct  | atthagatta  | acgcgtttct | gttttccatc | 420 |
| taaaatatct  | gcttgcataa | gaaccgttaa  | ttttattggt  | aatttatatg | attaattact | 480 |
| gacatgcttc  | acacccttct | tccaaagaac  | agacagggtgc | tttcttcgct | ctttcaacaa | 540 |
| taattcctgc  | cgaagcagac | ttattcttca  | tccaacgagg  | ctgaattcct | ctcttattaa | 600 |
| tatctac     |            |             |             |            |            | 607 |

<210> 283

<211> 1077

<212> DNA

<213> Chlamydia

<400> 283

|             |             |            |             |             |             |     |
|-------------|-------------|------------|-------------|-------------|-------------|-----|
| ggatccgaat  | tcggcacgag  | aagttaacga | tgacgatttg  | ttcctttggt  | agagaaggag  | 60  |
| caatcgaaac  | taaagtgtcg  | agagcatgtg | aagactccaa  | tgcaggaata  | atccccctcat | 120 |
| ttctagtaag  | caggaaaaaa  | gctcgtaacg | cctcttccatc | ggtggctaata | gtataaaagg  | 180 |
| ctcgctcctga | ctcatgcatt  | tcggcatgat | ctggcccaac  | tgaaggataa  | tctaattccag | 240 |
| cggaaatgga  | gtgagtttgt  | aatacttgct | catcgctcatc | ttgaagaaga  | tacgaataaaa | 300 |
| atccgtggaa  | tactccagggt | cgccctggtg | caaaacgtgc  | tgcatgtttt  | cctgaagaaa  | 360 |
| tgcccagctcc | tcccccttcc  | actccaatta | attggacttt  | tggattcggg  | ataaaatgat  | 420 |
| ggaaaaaatcc | aatagcgttg  | gagccacctc | cgatacatgc  | aatcagaata  | tcaggatctc  | 480 |
| ttcctgcaac  | tgcatggatt  | tgctctttca | cttcagcgct  | tataacagac  | tgaaaaaatc  | 540 |
| gaacgatatac | gggataagggt | aaaggctcta | aggccgatcc  | taagcaatag  | tgagtaaatg  | 600 |
| agtgtgttgt  | tgcccaatct  | tgtagagctt | gattaactgc  | atctttgagt  | ccacaagatc  | 660 |
| cttttgttac  | agaaacgact  | tcagcaccta | aaaagcgcac  | tttctctaca  | tttggtttct  | 720 |
| gtcgttccac  | atcttttgct  | cccatgtata | ctacacaatc  | taatcctaga  | taagcacacg  | 780 |
| ctggttgctgt | tgctactcca  | tggtgtcccg | cacctgtttc  | agctacaaca  | cgtgttttcc  | 840 |

|             |            |            |            |            |            |      |
|-------------|------------|------------|------------|------------|------------|------|
| caagatatttt | agcaagcaaa | cactgaccaa | gagcattatt | cagtttatgt | gctcctgtat | 900  |
| gcaaaagatc  | ttcgcgttta | agaaatactc | tagggccatc | aatagctcga | gcaaaattct | 960  |
| taacttcagt  | cagaggagtt | tgtctccccg | catagttttt | caaaatacaa | tctagttcag | 1020 |
| ataaaaaact  | ttgctgagtt | ttgagaatct | cccattccgc | ttttagattc | tgtatag    | 1077 |

&lt;210&gt; 284

&lt;211&gt; 407

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 284

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| ggatccgaat | tcggcacgag | aactactgag | caaattgggt | atccaacttc | ctctttaaga | 60  |
| aagaaaaaca | gaaggcattc | tccataccaa | gatttggtgc | atcgacaata | aaactccaat | 120 |
| ctttggctct | gctaactgga | gcggtgctgg | tatgattaaa | aactttgaag | acctattcat | 180 |
| ccttcgcccc | attacagaga | cacagcttca | ggcctttatg | gacgtctggg | ctcttctaga | 240 |
| aacaaatagc | tcctatctgt | ccccagagag | cgtgcttaag | gcccctactc | cttcaagtag | 300 |
| acctactcaa | caagatacag | attctgatga | cgaacaaccg | agtaccagcc | agcaagctat | 360 |
| ccgtatgaga | aaataggatt | agggaaacaa | aacgacagca | aaccaca    |            | 407 |

&lt;210&gt; 285

&lt;211&gt; 802

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 285

|            |            |            |             |             |             |     |
|------------|------------|------------|-------------|-------------|-------------|-----|
| ggatccgaat | tcggcacgag | ttagcttaat | gtctttgtca  | tctctaccta  | catttgcagc  | 60  |
| taattctaca | ggcacaattg | gaatcgttaa | tttacgtcgc  | tgccatagaag | agtctgctct  | 120 |
| tgggaaaaaa | gaatctgctg | aattcgaaaa | gatgaaaaac  | caattctcta  | acagcatggg  | 180 |
| gaagatggag | gaagaactgt | cttctatcta | ttccaagctc  | caagacgacg  | attacatgga  | 240 |
| aggtctatcc | gagaccgcag | ctgccgaatt | aagaaaaaaa  | ttcgaagatc  | tatctgcaga  | 300 |
| atacaacaca | gctcaagggc | agtattacca | aattattaaac | caaagtaatc  | tcaagcgcat  | 360 |
| gcaaaagatt | atggaagaag | tgaaaaaagc | ttctgaaact  | gtgcgtattc  | aagaaggctt  | 420 |
| gtcagtcctt | cttaacgaag | atattgtctt | atctatcgat  | agttcggcag  | ataaaaaccga | 480 |
| tgctgttatt | aaagttcttg | atgattcttt | tcaaaataat  | taacatgcga  | agctagccga  | 540 |
| ggagtgccgt | atgtctcaat | ccacttatcc | tcttgaacaa  | ttagctgatt  | ttttgaaagt  | 600 |
| cgagtttcaa | ggaaatggag | ctactcttct | ttccggagtt  | gaagagatcg  | aggaagcaaa  | 660 |
| aacggcacac | atcacattct | tagataatga | aaaatatgct  | aaacatttaa  | aatcatcgga  | 720 |
| agctggcgct | atcatcatat | ctcgaacaca | gtttcaaaaa  | tatcgagact  | tgaataaaaa  | 780 |
| ctttcttatc | acttctgagt | ct         |             |             |             | 802 |

&lt;210&gt; 286

&lt;211&gt; 588

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 286

|             |            |            |             |            |             |     |
|-------------|------------|------------|-------------|------------|-------------|-----|
| ggatccgaat  | tcggcacgag | gcaatattta | ctcccaacat  | tacggttcca | aataagcgat  | 60  |
| aaggtcttct  | aataaggaag | ttaatgtaag | aggctttttt  | attgcttttc | gtaaggtagt  | 120 |
| attgcaaccg  | cacgcgattg | aatgatacgc | aagccatttc  | catcatggaa | aagaaccctt  | 180 |
| ggacaaaaat  | acaaaggagg | ttcactccta | accagaaaaa  | gggagagtta | gtttccatgg  | 240 |
| gttttcctta  | tatacacccg | tttcacacaa | ttaggagccg  | cgtctagtat | ttggaataca  | 300 |
| aattgtcccc  | aagcgaattt | tgttcctgtt | tcagggaattt | ctcctaattg | ttctgtcagc  | 360 |
| catccgccta  | tggtaacgca | attagctgta | gtaggaagat  | caactccaaa | cagggtcatag | 420 |
| aaatcagaaa  | gtcataggtt | gcctgcagca | ataacaacat  | tcttgtctga | gtgagcgaat  | 480 |
| tgtttaaaag  | atgggcgatt | atgagctacc | tcacagaga   | ctatttttaa | tagatcattt  | 540 |
| tgggtaataca | atccttctat | agacctatat | tcacatga    | taatctcg   |             | 588 |



<210> 287  
 <211> 489  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> misc\_feature  
 <222> (1)...(489)  
 <223> n = A,T,C or G

<400> 287  
 agtgcctatt gttttgcagg ctttgtctga tgatagcgat accgtacgtg agattgctgt 60  
 acaagtagct gttatgtatg gttctagttg cttactgcgc gccgtgggcg atttagcgaa 120  
 aaatgattct tctattcaag tacgcatac tgcctatcgt gctgcagccg tgttgagat 180  
 acaagatctt gtgcctcatt tacgagttgt agtccaaaat acacaattag atggaacgga 240  
 aagaagagaa gcttgagat ctttatgtgt tcttactcgg cctcatagtgt gtgtattaac 300  
 tggcatagat caagctttta tgacctgtga gatgttaaag gaatatcctg aaaagtgtac 360  
 ggaagaacag attcgtacat tattggctgc agatcatcca gaagtgcagg tagctacttt 420  
 acagatcatt ctgagaggag gtagagtatt ccggtcatct tctataatgg aatcggttct 480  
 cgtgccgnt 489

<210> 288  
 <211> 191  
 <212> DNA  
 <213> Chlamydia

<400> 288  
 ggatccgaat tcaggatatg ctggtgggtt atcaataaaa agggttttgc ctttttttaa 60  
 gacgactttg tagataacgc taggagctgt agcaataata tcgagatcaa attctctaga 120  
 gattctctca aagatgattt ctaagtgcag cagtcctaaa aatccacagc ggaacccaaa 180  
 tccgagagag t 191

<210> 289  
 <211> 515  
 <212> DNA  
 <213> Chlamydia

<400> 289  
 ggatccgaat tcggcacgag gagcgacgtg aaatagtgga atcttcccgt attcttatta 60  
 cttctgcgtt gccttacgca aatggctcct tgcatttttg acatattacc ggtgcttatt 120  
 tgcttcgaga tgtttatgcg cgttttcaga gactacaagg caaagagggt ttgtatattt 180  
 gtggttctga tgaatacggg atcgcaatta cccttaatgc agagttggca ggcattgggt 240  
 atcaagaata tgcgacatg tatcataagc ttcataaaga taccttcaag aaattgggaa 300  
 tttctgtaga tttcttttcc agaactacga acgcttatca tcctgctatt gtgcaagatt 360  
 tctatcgaat cttgcaggaa cgcggactgg tagagaatca ggtgaccgaa cagctgtatt 420  
 ctgaggaaga aggggaagtt tttagcggacc gttatgttgt aggtacttgt cccaagtgtg 480  
 ggtttgatcg agctcgagga gatgagtgtc agcag 515

<210> 290  
 <211> 522  
 <212> DNA  
 <213> Chlamydia

<400> 290  
 ggatccgaat tcggcacgag ggaggaatgg aagggccctc cgattktama tctgctacca 60  
 tgccattcac tagaaactcc ataacagcgg ttttctctga tggcgagtaa gaagcaagca 120  
 tttgatgtaa attagcgcaa ttagaggggg atgaggttac ttggaaatat aaggagcgaa 180

```

gcgatgaagg agatgtatTT gctctggaag caaaggTTTc tgaagctaac agaacattgc 240
gtcctccaac aatcgctga ggattctggc tcatcagttg atgctttgcc tgaatgagag 300
cggacttaag tttcccatca gagggagcta tttgaattag ataatcaaga gctagatcct 360
ttattgtggg atcagaaaat ttactttgtga-gcgcatcgag aatttcgtca gaagaagaat 420
catcatcgaa cgaatttttc aatcctcgaa aatcttctcc agagacttcg gaaagatctt 480
ctgtgaaacg atcttcaaga ggagtatcgc ctttttccyc tg 522

```

<210> 291  
 <211> 1002  
 <212> DNA  
 <213> Chlamydia

```

<400> 291
atggcgacta acgcaattag atcggcagga agtgcagcaa gtaagatgct gctgccagtt 60
gccaaagaac cagcggtgt cagctccttt gctcagaaag ggatttattg tattcaacaa 120
ttttttacaa accctgggaa taagttagca aagttttagg gggcaacaaa aagtttagat 180
aaatgcttta agctaagtaa ggcggtttct gactgtgtcg taggatcgct ggaagaggcg 240
ggatgcacag gggacgcatt gacctccgcg agaaacgccc agggatggtt aaaaacaact 300
cgagaagttg ttgccttagc taatgtgtc aatggagctg ttccatctat cgtaaactcg 360
actcagaggt gttaccaata cacacgtcaa gccttcgagt taggaagcaa gacaaaagaa 420
agaaaaacgc ctggggagta tagtaaaatg ctattaactc gaggtgatta cctattggca 480
gcttccaggg aagcttgtac ggcagtcggt gcaacgactt actcagcgac attcgggtgtt 540
ttacgtccgt taatgttaat caataaactc acagcaaac cattcttaga caaagcgact 600
gtaggcaatt ttggcacggc tgttgctgga attatgacca ttaatcatat ggcaggagtt 660
gctggtgctg ttggcggaat cgcattagaa caaaagctgt tcaaacgtgc gaaggaatcc 720
ctatacaatg agagatgtgc cttagaaaac caacaatctc agttgagtgg ggacgtgatt 780
ctaagcgcgg aaagggcatt acgtaaagaa cacgttgcta ctctaaaaag aaatgtttta 840
actcttcttg aaaaagcttt agagttggta gtggatggag tcaaactcat tcctttaccg 900
attacagtgg cttgctccgc tgcaatttct ggagccttga cggcagcatc cgcaggaatt 960
ggcttatata gcatatggca gaaaacaaag tctggcaaat aa 1002

```

<210> 292  
 <211> 333  
 <212> PRT  
 <213> Chlamydia

```

<400> 292
Met Ala Thr Asn Ala Ile Arg Ser Ala Gly Ser Ala Ala Ser Lys Met
 1           5           10          15
Leu Leu Pro Val Ala Lys Glu Pro Ala Ala Val Ser Ser Phe Ala Gln
          20          25          30
Lys Gly Ile Tyr Cys Ile Gln Gln Phe Phe Thr Asn Pro Gly Asn Lys
          35          40          45
Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe Lys
          50          55          60
Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu Ala
65          70          75          80
Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly Met
          85          90          95
Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn Gly
          100         105         110
Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr Thr
          115         120         125
Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr Pro
          130         135         140
Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu Ala
145         150         155         160

```

Ala Ser Arg Glu Ala Cys Thr Ala Val Gly Ala Thr Thr Tyr Ser Ala  
                   165                  170                  175  
 Thr Phe Gly Val Leu Arg Pro Leu Met Leu Ile Asn Lys Leu Thr Ala  
                   180                  185                  190  
 Lys Pro Phe Leu Asp Lys Ala Thr Val Gly Asn Phe Gly Thr Ala Val  
                   195                  200                  205  
 Ala Gly Ile Met Thr Ile Asn His Met Ala Gly Val Ala Gly Ala Val  
                   210                  215                  220  
 Gly Gly Ile Ala Leu Glu Gln Lys Leu Phe Lys Arg Ala Lys Glu Ser  
 225                  230                  235                  240  
 Leu Tyr Asn Glu Arg Cys Ala Leu Glu Asn Gln Gln Ser Gln Leu Ser  
                   245                  250                  255  
 Gly Asp Val Ile Leu Ser Ala Glu Arg Ala Leu Arg Lys Glu His Val  
                   260                  265                  270  
 Ala Thr Leu Lys Arg Asn Val Leu Thr Leu Leu Glu Lys Ala Leu Glu  
                   275                  280                  285  
 Leu Val Val Asp Gly Val Lys Leu Ile Pro Leu Pro Ile Thr Val Ala  
                   290                  295                  300  
 Cys Ser Ala Ala Ile Ser Gly Ala Leu Thr Ala Ala Ser Ala Gly Ile  
 305                  310                  315                  320  
 Gly Leu Tyr Ser Ile Trp Gln Lys Thr Lys Ser Gly Lys  
                   325                  330

<210> 293  
 <211> 7  
 <212> DNA  
 <213> Chlamydia

<400> 293  
 tgcaatc

7

<210> 294  
 <211> 196  
 <212> PRT  
 <213> Chlamydia

<400> 294  
 Thr Met Gly Ser Leu Val Gly Arg Gln Ala Pro Asp Phe Ser Gly Lys  
                   5                  10                  15  
 Ala Val Val Cys Gly Glu Glu Lys Glu Ile Ser Leu Ala Asp Phe Arg  
                   20                  25                  30  
 Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val  
                   35                  40                  45  
 Cys Pro Thr Glu Leu His Ala Phe Gln Asp Arg Leu Val Asp Phe Glu  
                   50                  55                  60  
 Glu His Gly Ala Val Val Leu Gly Cys Ser Val Asp Asp Ile Glu Thr  
                   65                  70                  75                  80  
 His Ser Arg Trp Leu Thr Val Ala Arg Asp Ala Gly Gly Ile Glu Gly  
                   85                  90                  95  
 Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala  
                   100                  105                  110

Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe  
 115 120 125  
 Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu  
 130 135 140  
 Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu  
 145 150 155 160  
 Ile Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser  
 165 170 175  
 Gly Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe  
 180 185 190  
 Gln Thr Met Asp  
 195

<210> 295  
 <211> 181  
 <212> PRT  
 <213> Chlamydia

<400> 295  
 Lys Gly Gly Lys Met Ser Thr Thr Ile Ser Gly Asp Ala Ser Ser Leu  
 5 10 15  
 Pro Leu Pro Thr Ala Ser Cys Val Glu Thr Lys Ser Thr Ser Ser Ser  
 20 25 30  
 Thr Lys Gly Asn Thr Cys Ser Lys Ile Leu Asp Ile Ala Leu Ala Ile  
 35 40 45  
 Val Gly Ala Leu Val Val Val Ala Gly Val Leu Ala Leu Val Leu Cys  
 50 55 60  
 Ala Ser Asn Val Ile Phe Thr Val Ile Gly Ile Pro Ala Leu Ile Ile  
 65 70 75 80  
 Gly Ser Ala Cys Val Gly Ala Gly Ile Ser Arg Leu Met Tyr Arg Ser  
 85 90 95  
 Ser Tyr Ala Ser Leu Glu Ala Lys Asn Val Leu Ala Glu Gln Arg Leu  
 100 105 110  
 Arg Asn Leu Ser Glu Glu Lys Asp Ala Leu Ala Ser Val Ser Phe Ile  
 115 120 125  
 Asn Lys Met Phe Leu Arg Gly Leu Thr Asp Asp Leu Gln Ala Leu Glu  
 130 135 140  
 Ala Lys Val Met Glu Phe Glu Ile Asp Cys Leu Asp Arg Leu Glu Lys  
 145 150 155 160  
 Asn Glu Gln Ala Leu Leu Ser Asp Val Arg Leu Val Leu Ser Ser Tyr

|   |     |  |     |  |     |
|---|-----|--|-----|--|-----|
|   | 165 |  | 170 |  | 175 |
| Thr Arg Trp Leu Asp   |     |  |     |  |     |
| 180   |     |  |     |  |     |
|   |     |  |     |  |     |
| <210> 296   |     |  |     |  |     |
| <211> 124   |     |  |     |  |     |
| <212> PRT   |     |  |     |  |     |
| <213> Chlamydia   |     |  |     |  |     |
|   |     |  |     |  |     |
| <400> 296   |     |  |     |  |     |
| Ile Tyr Glu Val Met Asn Met Asp Leu Glu Thr Arg Arg Ser Phe Ala |     |  |     |  |     |
|   | 5   |  | 10  |  | 15  |
| Val Gln Gln Gly His Tyr Gln Asp Pro Arg Ala Ser Asp Tyr Asp Leu |     |  |     |  |     |
|   | 20  |  | 25  |  | 30  |
| Pro Arg Ala Ser Asp Tyr Asp Leu Pro Arg Ser Pro Tyr Pro Thr Pro |     |  |     |  |     |
|   | 35  |  | 40  |  | 45  |
| Pro Leu Pro Ser Arg Tyr Gln Leu Gln Asn Met Asp Val Glu Ala Gly |     |  |     |  |     |
|   | 50  |  | 55  |  | 60  |
| Phe Arg Glu Ala Val Tyr Ala Ser Phe Val Ala Gly Met Tyr Asn Tyr |     |  |     |  |     |
|   | 65  |  | 70  |  | 75  |
| Val Val Thr Gln Pro Gln Glu Arg Ile Pro Asn Ser Gln Gln Val Glu |     |  |     |  |     |
|   | 85  |  | 90  |  | 95  |
| Gly Ile Leu Arg Asp Met Leu Thr Asn Gly Ser Gln Thr Phe Ser Asn |     |  |     |  |     |
|   | 100 |  | 105 |  | 110 |
| Leu Met Gln Arg Trp Asp Arg Glu Val Asp Arg Glu                 |     |  |     |  |     |
|   | 115 |  | 120 |  |     |
|   |     |  |     |  |     |
| <210> 297   |     |  |     |  |     |
| <211> 488   |     |  |     |  |     |
| <212> PRT   |     |  |     |  |     |
| <213> Chlamydia   |     |  |     |  |     |
|   |     |  |     |  |     |
| <400> 297   |     |  |     |  |     |
| Lys Gly Ser Leu Pro Ile Leu Gly Pro Phe Leu Asn Gly Lys Met Gly |     |  |     |  |     |
|   | 5   |  | 10  |  | 15  |
| Phe Trp Arg Thr Ser Ile Met Lys Met Asn Arg Ile Trp Leu Leu Leu |     |  |     |  |     |
|   | 20  |  | 25  |  | 30  |
| Leu Thr Phe Ser Ser Ala Ile His Ser Pro Val Arg Gly Glu Ser Leu |     |  |     |  |     |
|   | 35  |  | 40  |  | 45  |
| Val Cys Lys Asn Ala Leu Gln Asp Leu Ser Phe Leu Glu His Leu Leu |     |  |     |  |     |
|   | 50  |  | 55  |  | 60  |
| Gln Val Lys Tyr Ala Pro Lys Thr Trp Lys Glu Gln Tyr Leu Gly Trp |     |  |     |  |     |
|   | 65  |  | 70  |  | 75  |
|   |     |  |     |  | 80  |

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Asp        | Leu        | Val        | Gln        | Ser<br>85  | Ser        | Val        | Ser        | Ala        | Gln<br>90  | Gln        | Lys        | Leu        | Arg        | Thr<br>95  | Gln        |
| Glu        | Asn        | Pro        | Ser<br>100 | Thr        | Ser        | Phe        | Cys        | Gln<br>105 | Gln        | Val        | Leu        | Ala        | Asp<br>110 | Phe        | Ile        |
| Gly        | Gly        | Leu<br>115 | Asn        | Asp        | Phe        | His        | Ala<br>120 | Gly        | Val        | Thr        | Phe        | Phe<br>125 | Ala        | Ile        | Glu        |
| Ser        | Ala<br>130 | Tyr        | Leu        | Pro        | Tyr        | Thr<br>135 | Val        | Gln        | Lys        | Ser        | Ser<br>140 | Asp        | Gly        | Arg        | Phe        |
| Tyr<br>145 | Phe        | Val        | Asp        | Ile        | Met<br>150 | Thr        | Phe        | Ser        | Ser        | Glu<br>155 | Ile        | Arg        | Val        | Gly        | Asp<br>160 |
| Glu        | Leu        | Leu        | Glu        | Val<br>165 | Asp        | Gly        | Ala        | Pro        | Val<br>170 | Gln        | Asp        | Val        | Leu        | Ala<br>175 | Thr        |
| Leu        | Tyr        | Gly        | Ser<br>180 | Asn        | His        | Lys        | Gly        | Thr<br>185 | Ala        | Ala        | Glu        | Glu        | Ser<br>190 | Ala        | Ala        |
| Leu        | Arg        | Thr<br>195 | Leu        | Phe        | Ser        | Arg        | Met<br>200 | Ala        | Ser        | Leu        | Gly        | His<br>205 | Lys        | Val        | Pro        |
| Ser        | Gly<br>210 | Arg        | Thr        | Thr        | Leu        | Lys<br>215 | Ile        | Arg        | Arg        | Pro        | Phe<br>220 | Gly        | Thr        | Thr        | Arg        |
| Glu<br>225 | Val        | Arg        | Val        | Lys        | Trp<br>230 | Arg        | Tyr        | Val        | Pro        | Glu<br>235 | Gly        | Val        | Gly        | Asp        | Leu<br>240 |
| Ala        | Thr        | Ile        | Ala        | Pro<br>245 | Ser        | Ile        | Arg        | Ala        | Pro<br>250 | Gln        | Leu        | Gln        | Lys        | Ser<br>255 | Met        |
| Arg        | Ser        | Phe        | Phe<br>260 | Pro        | Lys        | Lys        | Asp        | Asp<br>265 | Ala        | Phe        | His        | Arg        | Ser<br>270 | Ser        | Ser        |
| Leu        | Phe        | Tyr<br>275 | Ser        | Pro        | Met        | Val        | Pro<br>280 | His        | Phe        | Trp        | Ala        | Glu<br>285 | Leu        | Arg        | Asn        |
| His        | Tyr<br>290 | Ala        | Thr        | Ser        | Gly        | Leu<br>295 | Lys        | Ser        | Gly        | Tyr        | Asn<br>300 | Ile        | Gly        | Ser        | Thr        |
| Asp<br>305 | Gly        | Phe        | Leu        | Pro        | Val<br>310 | Ile        | Gly        | Pro        | Val        | Ile<br>315 | Trp        | Glu        | Ser        | Glu        | Gly<br>320 |
| Leu        | Phe        | Arg        | Ala        | Tyr<br>325 | Ile        | Ser        | Ser        | Val        | Thr<br>330 | Asp        | Gly        | Asp        | Gly        | Lys<br>335 | Ser        |
| His        | Lys        | Val        | Gly<br>340 | Phe        | Leu        | Arg        | Ile        | Pro<br>345 | Thr        | Tyr        | Ser        | Trp        | Gln<br>350 | Asp        | Met        |
| Glu        | Asp        | Phe<br>355 | Asp        | Pro        | Ser        | Gly        | Pro<br>360 | Pro        | Pro        | Trp        | Glu        | Glu<br>365 | Phe        | Ala        | Lys        |
| Ile        | Ile<br>370 | Gln        | Val        | Phe        | Ser        | Ser<br>375 | Asn        | Thr        | Glu        | Ala        | Leu<br>380 | Ile        | Ile        | Asp        | Gln        |

Thr Asn Asn Pro Gly Gly Ser Val Leu Tyr Leu Tyr Ala Leu Leu Ser  
 385 390 395 400  
 Met Leu Thr Asp Arg Pro Leu Glu Leu Pro Lys His Arg Met Ile Leu  
 405 410 415  
 Thr Gln Asp Glu Val Val Asp Ala Leu Asp Trp Leu Thr Leu Leu Glu  
 420 425 430  
 Asn Val Asp Thr Asn Val Glu Ser Arg Leu Ala Leu Gly Asp Asn Met  
 435 440 445  
 Glu Gly Tyr Thr Val Asp Leu Gln Val Ala Glu Tyr Leu Lys Ser Phe  
 450 455 460  
 Gly Arg Gln Val Leu Asn Cys Trp Ser Lys Gly Asp Ile Glu Leu Ser  
 465 470 475 480  
 Thr Pro Ile Pro Leu Phe Gly Phe  
 485

<210> 298  
 <211> 140  
 <212> PRT  
 <213> Chlamydia

<400> 298  
 Arg Ile Asp Ile Ser Ser Val Thr Phe Phe Ile Gly Ile Leu Leu Ala  
 5 10 15  
 Val Asn Ala Leu Thr Tyr Ser His Val Leu Arg Asp Leu Ser Val Ser  
 20 25 30  
 Met Asp Ala Leu Phe Ser Arg Asn Thr Leu Ala Val Leu Leu Gly Leu  
 35 40 45  
 Val Ser Ser Val Leu Asp Asn Val Pro Leu Val Ala Ala Thr Ile Gly  
 50 55 60  
 Met Tyr Asp Leu Pro Met Asn Asp Pro Leu Trp Lys Leu Ile Ala Tyr  
 65 70 75 80  
 Thr Ala Gly Thr Gly Gly Ser Ile Leu Ile Ile Gly Ser Ala Ala Gly  
 85 90 95  
 Val Ala Tyr Met Gly Met Glu Lys Val Ser Phe Gly Trp Tyr Val Lys  
 100 105 110  
 His Ala Ser Trp Ile Ala Leu Ala Ser Tyr Phe Gly Gly Leu Ala Val  
 115 120 125  
 Tyr Phe Leu Met Glu Asn Cys Val Asn Leu Phe Val  
 130 135 140

<210> 299  
 <211> 361  
 <212> PRT  
 <213> Chlamydia

<400> 299

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gln | Glu | Ile | Ala | Asp | Ser | Pro | Leu | Val | Lys | Lys | Ala | Glu | Glu | Gln |
|     |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ile | Asn | Gln | Ala | Gln | Gln | Asp | Ile | Gln | Thr | Ile | Thr | Pro | Ser | Gly | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Asp | Ile | Pro | Ile | Val | Gly | Pro | Ser | Gly | Ser | Ala | Ala | Ser | Ala | Gly | Ser |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Ala | Ala | Gly | Ala | Leu | Lys | Ser | Ser | Asn | Asn | Ser | Gly | Arg | Ile | Ser | Leu |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Leu | Leu | Asp | Asp | Val | Asp | Asn | Glu | Met | Ala | Ala | Ile | Ala | Met | Gln | Gly |
| 65  |     |     |     |     | 70  |     |     |     | 75  |     |     |     |     | 80  |     |
| Phe | Arg | Ser | Met | Ile | Glu | Gln | Phe | Asn | Val | Asn | Asn | Pro | Ala | Thr | Ala |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Lys | Glu | Leu | Gln | Ala | Met | Glu | Ala | Gln | Leu | Thr | Ala | Met | Ser | Asp | Gln |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Leu | Val | Gly | Ala | Asp | Gly | Glu | Leu | Pro | Ala | Glu | Ile | Gln | Ala | Ile | Lys |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Asp | Ala | Leu | Ala | Gln | Ala | Leu | Lys | Gln | Pro | Ser | Ala | Asp | Gly | Leu | Ala |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Thr | Ala | Met | Gly | Gln | Val | Ala | Phe | Ala | Ala | Ala | Lys | Val | Gly | Gly | Gly |
| 145 |     |     |     |     | 150 |     |     |     | 155 |     |     |     |     | 160 |     |
| Ser | Ala | Gly | Thr | Ala | Gly | Thr | Val | Gln | Met | Asn | Val | Lys | Gln | Leu | Tyr |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Lys | Thr | Ala | Phe | Ser | Ser | Thr | Ser | Ser | Ser | Ser | Tyr | Ala | Ala | Ala | Leu |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ser | Asp | Gly | Tyr | Ser | Ala | Tyr | Lys | Thr | Leu | Asn | Ser | Leu | Tyr | Ser | Glu |
|     | 195 |     |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Arg | Ser | Gly | Val | Gln | Ser | Ala | Ile | Ser | Gln | Thr | Ala | Asn | Pro | Ala |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Leu | Ser | Arg | Ser | Val | Ser | Arg | Ser | Gly | Ile | Glu | Ser | Gln | Gly | Arg | Ser |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |
| Ala | Asp | Ala | Ser | Gln | Arg | Ala | Ala | Glu | Thr | Ile | Val | Arg | Asp | Ser | Gln |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Thr | Leu | Gly | Asp | Val | Tyr | Ser | Arg | Leu | Gln | Val | Leu | Asp | Ser | Leu | Met |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Thr | Ile | Val | Ser | Asn | Pro | Gln | Ala | Asn | Gln | Glu | Glu | Ile | Met | Gln |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Lys | Leu | Thr | Ala | Ser | Ile | Ser | Lys | Ala | Pro | Gln | Phe | Gly | Tyr | Pro | Ala |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Val | Gln | Asn | Ser | Val | Asp | Ser | Leu | Gln | Lys | Phe | Ala | Ala | Gln | Leu | Glu |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Arg | Glu | Phe | Val | Asp | Gly | Glu | Arg | Ser | Leu | Ala | Glu | Ser | Gln | Glu | Asn |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ala | Phe | Arg | Lys | Gln | Pro | Ala | Phe | Ile | Gln | Gln | Val | Leu | Val | Asn | Ile |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ala | Ser | Leu | Phe | Ser | Gly | Tyr | Leu | Ser |     |     |     |     |     |     |     |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     |     |     |     |     |

<210> 300  
<211> 207  
<212> PRT  
<213> Chlamydia

|            |            |            |            |            |            |            |            |            |            |            |            |           |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|------------|------------|------------|
| <400> 300  |            |            |            |            |            |            |            |            |            |            |            |           |            |            |            |
| Ser        | Ser        | Lys        | Ile        | Val<br>5   | Ser        | Leu        | Cys        | Glu        | Gly<br>10  | Ala        | Val        | Ala       | Asp        | Ala<br>15  | Arg        |
| Met        | Cys        | Lys        | Ala<br>20  | Glu        | Leu        | Ile        | Lys        | Lys<br>25  | Glu        | Ala        | Asp        | Ala       | Tyr<br>30  | Leu        | Phe        |
| Cys        | Glu        | Lys<br>35  | Ser        | Gly        | Ile        | Tyr        | Leu<br>40  | Thr        | Lys        | Lys        | Glu        | Gly<br>45 | Ile        | Leu        | Ile        |
| Pro        | Ser<br>50  | Ala        | Gly        | Ile        | Asp        | Glu<br>55  | Ser        | Asn        | Thr        | Asp        | Gln<br>60  | Pro       | Phe        | Val        | Leu        |
| Tyr<br>65  | Pro        | Lys        | Asp        | Ile        | Leu<br>70  | Gly        | Ser        | Cys        | Asn<br>75  | Arg        | Ile        | Gly       | Glu        | Trp        | Leu<br>80  |
| Arg        | Asn        | Tyr        | Phe        | Arg<br>85  | Val        | Lys        | Glu        | Leu        | Gly<br>90  | Val        | Ile        | Ile       | Thr        | Asp<br>95  | Ser        |
| His        | Thr        | Thr        | Pro<br>100 | Met        | Arg        | Arg        | Gly        | Val<br>105 | Leu        | Gly        | Ile        | Gly       | Leu<br>110 | Cys        | Trp        |
| Tyr        | Gly        | Phe<br>115 | Ser        | Pro        | Leu        | His        | Asn<br>120 | Tyr        | Ile        | Gly        | Ser<br>125 | Leu       | Asp        | Cys        | Phe        |
| Gly        | Arg<br>130 | Pro        | Leu        | Gln        | Met        | Thr<br>135 | Gln        | Ser        | Asn        | Leu        | Val<br>140 | Asp       | Ala        | Leu        | Ala        |
| Val<br>145 | Ala        | Ala        | Val        | Val        | Cys<br>150 | Met        | Gly        | Glu        | Gly        | Asn<br>155 | Glu        | Gln       | Thr        | Pro        | Leu<br>160 |
| Ala        | Val        | Ile        | Glu        | Gln<br>165 | Ala        | Pro        | Asn        | Met        | Val<br>170 | Tyr        | His        | Ser       | Tyr        | Pro<br>175 | Thr        |

Ser Arg Glu Glu Tyr Cys Ser Leu Arg Ile Asp Glu Thr Glu Asp Leu  
 180 185 190

Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln Glu Lys Lys  
 195 200 205

<210> 301  
 <211> 183  
 <212> PRT  
 <213> Chlamydia

<400> 301  
 Ile Pro Pro Ala Pro Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp  
 5 10 15

Ile Asp Ala Asn Gly Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser  
 20 25 30

Gly Arg Glu Gln Lys Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu  
 35 40 45

Asp Glu Ile Gln Gln Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu  
 50 55 60

Asp Lys Gln Arg Lys Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly  
 65 70 75 80

Met Ile Phe Arg Ala Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile  
 85 90 95

Pro Ala Glu Leu Val Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg  
 100 105 110

Gln Ala Ile Lys Glu Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser  
 115 120 125

Asp Glu Leu Ser Thr Arg Met Gln Lys Ile Gly Glu Ala Met Gln Ala  
 130 135 140

Gln Ser Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly  
 145 150 155 160

Pro Asn Ile Asn Ser Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg  
 165 170 175

Pro Pro Ala Gly Gly Ser Ala  
 180

<210> 302  
 <211> 232  
 <212> PRT  
 <213> Chlamydia

<400> 302

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Gln Glu Thr Tyr Asp  
                     5                    10                    15  
 Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala Ile Asp Ile Leu Lys Gln  
                     20                    25                    30  
 Cys Pro Thr Val Arg Phe Asp Gln Thr Val Asp Val Ser Val Lys Leu  
                     35                    40                    45  
 Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser  
                     50                    55                    60  
 Leu Pro His Gly Thr Gly Lys Val Leu Arg Ile Leu Val Phe Ala Ala  
                     65                    70                    75                    80  
 Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly  
                     85                    90                    95  
 Ser Asp Asp Leu Val Glu Lys Ile Lys Gly Gly Trp Val Asp Phe Asp  
                     100                    105                    110  
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly  
                     115                    120                    125  
 Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Ala Gly Thr  
                     130                    135                    140  
 Val Thr Thr Asp Val Val Lys Thr Ile Ala Glu Leu Arg Lys Gly Lys  
                     145                    150                    155                    160  
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Ala  
                     165                    170                    175  
 Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu  
                     180                    185                    190  
 Cys Ala Ala Leu Val Lys Ala Lys Pro Ala Thr Ala Lys Gly Gln Tyr  
                     195                    200                    205  
 Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val  
                     210                    215                    220  
 Asp Thr Arg Glu Leu Ile Ala Leu  
                     225                    230

<210> 303  
 <211> 238  
 <212> PRT  
 <213> chlamydia

<400> 303  
 Ile Asn Ser Lys Leu Glu Thr Lys Asn Leu Ile Tyr Leu Lys Leu Lys  
                     5                    10                    15  
 Ile Lys Lys Ser Phe Lys Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn  
                     20                    25                    30

Thr Gln Asn Cys Val Phe Ala Asp Asn Ile Lys Val Gly Gln Met Thr  
           35                          40                          45  
 Glu Pro Leu Lys Asp Gln Gln Ile Ile Leu Gly Thr Thr Ser Thr Pro  
           50                          55                          60  
 Val Ala Ala Lys Met Thr Ala Ser Asp Gly Ile Ser Leu Thr Val Ser  
   65                          70                          75                          80  
 Asn Asn Pro Ser Thr Asn Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu  
                           85                          90                          95  
 Lys Ala Tyr Gln Leu Ile Leu Glu Lys Leu Gly Asp Gln Ile Leu Gly  
                   100                          105                          110  
 Gly Ile Ala Asp Thr Ile Val Asp Ser Thr Val Gln Asp Ile Leu Asp  
           115                          120                          125  
 Lys Ile Thr Thr Asp Pro Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn  
   130                          135                          140  
 Phe Pro Ile Thr Asn Lys Ile Gln Cys Asn Gly Leu Phe Thr Pro Arg  
  145                          150                          155                          160  
 Asn Ile Glu Thr Leu Leu Gly Gly Thr Glu Ile Gly Lys Phe Thr Val  
                   165                          170                          175  
 Thr Pro Lys Ser Ser Gly Ser Met Phe Leu Val Ser Ala Asp Ile Ile  
           180                          185                          190  
 Ala Ser Arg Met Glu Gly Gly Val Val Leu Ala Leu Val Arg Glu Gly  
           195                          200                          205  
 Asp Ser Lys Pro Tyr Ala Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro  
   210                          215                          220  
 Asn Leu Cys Ser Leu Arg Thr Arg Ile Ile Asn Thr Gly Leu  
  225                          230                          235

<210> 304

<211> 54

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer

<400> 304

gatatacata tgcatacaca tcaccatcac atgagtcaaa aaaataaaaa ctct

54

<210> 305

<211> 77

<212> DNA

<213> Artificial Sequence

<220>

<223> Retroviral vectors pBIB-KS1 modified to contain  
Kosak translation initiation site and stop codons.

<400> 305  
gatctgccgc caccatggaa ttcgatatacg gatccctgca gaagcttgag ctcgagcgcg 60  
gccgctaatt agctgag 77

<210> 306  
<211> 77  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Retroviral vectors pBIB-KS1 modified to contain  
Kosak translation initiation site and stop codons.

<400> 306  
acggcggtgg taccttaagc tatagcctag ggacgtcttc gaactcgagc tcgcgccggc 60  
gattaatcga ctgagct 77

<210> 307  
<211> 78  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Retroviral vectors pBIB-KS2 modified to contain  
Kosak translation initiation site and stop codons.

<400> 307  
gatctgccgc caccatggga attcgatatc ggatccctgc agaagcttga gctcgagcgc 60  
ggccgctaatt tagctgag 78

<210> 308  
<211> 78  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Retroviral vectors pBIB-KS2 modified to contain  
Kosak translation initiation site and stop codons.

<400> 308  
acggcggtgg tacccttaag ctatagccta gggacgtctt cgaactcgag ctgcgccggg 60  
cgattaatcg actcagct 78

<210> 309  
<211> 79  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Retroviral vectors pBIB-KS3 modified to contain  
Kosak translation initiation site and stop codons.

<400> 309  
gatctgccgc caccatgggg aattcgatat cggatccctg cagaagcttg agctcgagcg 60  
cggccgctaa ttagctgag 79

<210> 310

<211> 79  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Retroviral vectors pBIB-KS3 modified to contain  
Kosak translation initiation site and stop codons.

<400> 310

acggcggtgg taccccttaa gctatagcct agggacgtct tcgaactcga gctcgcgccg  
gcgattaatc gactcagct

60  
79